## CORNISH KNIT GOODS/CORNISH MINI-MALLS (DAR SITE ID #28)

| | |
|---|---|
| Address: | 121 Ingraham Street, Brooklyn, New York 11237<br>(89 Porter Avenue) |
| Tax Lot Parcel(s): | Brooklyn Block 2993, Lot 1 |
| Latitude: | 40.70798264 |
| Longitude: | -73.92861097 |
| Regulatory Programs/ Numbers/Codes: | NYSDEC Site Code: V00409, USEPA FRS No. 110001574029, USEPA ID No. NYD001683457, PBS No. 2-607895 and 2-032921, NYSDEC Spill No. 0513812, 0812527, and 9600503, IWD Permit No. P-513, NEI No. NY047X208 |
| Analytical Data Status: | ☒ Electronic Data Available ☐ Hardcopies only<br>☐ No Data Available |

# 1 SUMMARY OF CONSTITUENTS OF POTENTIAL CONCERN (COPCs) TRANSPORT PATHWAYS TO THE CREEK

The current understanding of the transport mechanisms of COPCs from the upland portions of the Cornish Knit Goods/Cornish Mini-Malls site (site), also known as Cornish Knit Goods/Cornish Mini-Mills, to Newtown Creek is summarized in this section and Table 1 and supported in the following the sections.

### Overland Transport

The site is approximately 420 feet from English Kills, a tributary of Newtown Creek. This is not a complete current or historical pathway.

### Bank Erosion

The site is not adjacent to Newtown Creek or associated waterways. This is not a complete current or historical pathway.

### Groundwater

The site is located approximately 420 feet from English Kills. General groundwater flow directions are to the east, away from English Kills. However, the unconfined water-bearing formation of the upper glacial aquifer creates preferential flow paths in the subsurface which limit the accuracy of the defining groundwater flow directions (Action 2002). Groundwater investigations have been conducted at the site since 2001 and have included groundwater monitoring of up to ten monitoring wells. Groundwater COPCs detected in groundwater samples collected at the site include volatile organic compounds (VOCs), chlorinated volatile organic compounds (CVOCs), semi-volatile organic compounds (SVOCs), and metals. An Air Sparge/Soil Vapor Extraction (AS/SVE) system has been operating at the site since 2004. SVOCs have been removed from the groundwater monitoring program and monitoring results through October 2010 show a net removal of CVOCs. This is a complete historical pathway. There is insufficient evidence to make a current pathway determination.

### Overwater Activities

The site is not adjacent to Newtown Creek or associated waterways. Information regarding overwater activities was not identified in documents available for review. This is not a complete current or historical pathway.

### Stormwater/Wastewater Systems

Information regarding on-site stormwater or wastewater infrastructure and management was not identified in documents available for review. The site is within the Newtown Creek Water Pollution Control Plant (WPCP) sewershed. Stormwater and wastewater discharges from the site flow into a combined municipal sewer system. When the combined flows exceed the system's capacity, untreated combined sewer overflows (CSOs) are discharged to English Kills through Outfall NC-015, which is a tributary to the Newtown Creek study area (NYCDEP 2007).

The site had an Industrial Wastewater Discharge (IWD) Permit No. P-513 from 1987 to 1995 (NYCDEP 1987, 1995). The permits and associated Discharge Monitoring Reports were not provided in documents available for review. Moisture from the SVE influent air stream of the AS/SVE system is collected, treated and discharged to the sanitary sewer (Action 2002; CEA 2009). The discharge is permitted by the New York City Department of Environmental

Protection (NYCDEP). The permit limits are summarized in Section 9.3. There is insufficient evidence to make a current or historical pathway determination for discharge to the sewer/CSO and direct discharge of stormwater and wastewater.

### Air Releases

Air emissions from the AS/SVE system are permitted by NYCDEP under installation number PB012203H. Photoionization detector (PID) readings are taken at the emission point on the roof (CEA 2005). There is insufficient evidence to make a historical or and current pathway determination.

## 2 PROJECT STATUS

A summary of investigation and remedial activities at the site is provided in the following table:

| Activity | | Date(s)/Comments |
|---|---|---|
| Phase 1 Environmental Site Assessment | ☒ | March 2000 – Phase 1 ESA |
| Site Characterization | ☒ | August 2001 – VCP Site Investigation |
| Remedial Investigation | ☐ | |
| Remedy Selection | ☒ | September 2001 – RAWP |
| Remedial Design/Remedial Action Implementation | ☒ | December 2002 – Pilot Test and Remedial Design Report<br>October 2003 – AS/SVE System Engineering Report |
| Use Restrictions (Environmental Easements or Institutional Controls) | ☒ | April 2010 – Deed Restriction |
| Construction Completion | ☒ | November 2002 – AS/SVE System installed<br>June 2009 – SMP |
| Site Closeout/No Further Action Determination | ☒ | April 2011 – VCP release letter |

Notes:
AS/SVE – Air Sparge/Soil Vapor Extraction
ESA – Environmental Site Assessment
RAWP – Remedial Action Work Plan
SMP – Site Management Plan
VCP – Voluntary Clean-up Program

- NYSDEC Site Code(s): NYSDEC Site Code: V00409
- NYSDEC Site Manager: Ioana Munteanu-Ramnic, 718.482.4065

## 3 SITE OWNERSHIP HISTORY

Respondent Member: ☐ Yes ☒ No

| Owner | Years | Occupant | Types of Operations |
|---|---|---|---|
| K&K Realty Corporation | 1925 – 1963 | Unknown | Textile manufacturer |
| | | Philip Makowsky ca. 1949 | Manufactured outerwear for children |
| | | Taylor Made Button Hole Corp. ca. 1953 | Textile manufacturer |
| | | Cornish Knit Goods/Cornish Mini-Malls ca. 1955 – 1963 | Textile manufacturer (sweaters) |
| Lenday Co. | 1963 – 1968 | | |
| Repla Properties, Inc. | 1968 – 1980 | | |
| | 1980 – 1995 | Unknown | Illegally used as dry cleaning facility and stolen car scrap yard |
| | 1995 – 1999 | | Unknown |
| Porter Realty Corporation/ABC Closing Corporation | 1999 – 2002 | Unoccupied | None |
| Porter Avenue Housing Development Fund Corporation (DOE Fund, Inc.) | 2002 – present | Peter Jay Sharp Center for Opportunity (PJSCO) | Shelter and rehabilitation center for the homeless |

Note:
ca. – circa
Discussion and sources provided in Section 6.

## 4 PROPERTY DESCRIPTION

The property occupies approximately 0.57 acre. The site is occupied by a 4-story building, small courtyard, and 2-story addition. The site is at approximately 15 feet above mean sea level and slopes down from south to north towards English Kills. English Kills is located approximately 420 feet northwest of the property (see Figure 1). The site and surrounding properties are zoned M1-2 (manufacturing). M1 districts are manufacturing districts designated for areas with light industrial uses adjacent to residential or commercial uses (NYCDCP 2012). A 2002 site layout is included as Attachment 1.

## 5 CURRENT SITE USE

The site is currently operated as the Peter Jay Sharp Center for Opportunity, a shelter and rehabilitation center for the homeless (NYSDEC 2012; Doe Fund, Inc. 2012).

## 6 SITE USE HISTORY

The property was a textile factory from the time of building construction in 1925 until approximately 1995 (Action 2002). Prior to the construction of the textile factory, the site was undeveloped (Sanborn 1888, 1907). In 1949, Philip Makowsky leased 5,000 square feet of space at 121 Ingraham to manufacture outerwear for children (NY0T 1949).

From at least 1955 through 1980 the site was in use by Cornish Knit Goods/Cornish Mini-Malls to manufacture sweaters (NYS 1955). The site was abandoned in 1980. An illegal dry cleaning operation and a stolen car scrap yard operated on the site from 1980 until 1995 (NYSDEC 2012).

The Porter Realty Corporation bought the property in 1999 (Kings County Office of the City Register 1999). In 2000, the site owned by ABC Closing Corporation entered into a Voluntary Cleanup Program (VCP) Agreement with the New York State Department of Environmental Conservation (NYSDEC; 2012).

In 2002, Porter Realty Corporation sold the site to the Porter Avenue Housing Development Fund Corporation (Porter Avenue HDFC), a subsidiary of the DOE Fund, Inc. (Kings County Office of the City Register 2002; NYSDEC 2012). In 2003, the building was renovated and

opened as the Peter Jay Sharp Center for Opportunity with housing, classrooms, medical facilities, and training space for homeless men (Doe Fund, Inc. 2012).

# 7 CURRENT AND HISTORICAL AREAS OF CONCERN AND COPCs

The current understanding of the historical and current potential upland areas of concern at the site is summarized in Table 1. The following sections provide brief discussion of the potential sources and COPCs at the site requiring additional discussion.

Records indicate the site is an active Resource Conservation and Recovery Act (RCRA) conditionally-exempt small quantity generator (CESQG; USEPA 2012). Historically, it has been listed as small quantity generator (SQG) and a large quantity generator (LQG; EDR 2010).

Potential areas of concern at the site include areas in which historical dry cleaning and vehicle scrap yard operations and petroleum and hazardous waste storage and handling occurred. Analytical results summarized in Section 9 indicate that the COPCs for these areas include CVOCs and associated breakdown byproducts (methylene chloride, tetrachloroethene [PCE], trichloroethylene [TCE], and cis-1,2-Dichloroethene) and non-chlorinated VOCs (acetone, toluene), phthalates (bis[2-ethylhexyl]phthalate and diethylphthalate), other SVOCs, and metals.

## 7.1 Uplands

Two petroleum underground storage tanks (USTs) were located on the site and were closed in-place in 2002 (Petroleum Bulk Storage [PBS] No. 2-607895; PBS No. 2-032921). The locations of these USTs are shown on Attachment 2. Historical petroleum product storage and capacity is summarized in the following table (EDR 2010; NYSDEC 2012):

| Tank ID | Date Installed | Tank Status | Capacity (gallons) | Product |
|---|---|---|---|---|
| 001 | 07/01/72 | Closed in-place 09/09/02 | 10,000 | No. 2 Fuel Oil |
| 002 | 05/01/70 | Closed in-place 09/09/02 | 5,000 | No. 2 Fuel Oil |

Available hazardous waste manifest documentation indicates that between 1989 and 1991, the site shipped spent halogenated solvents and still bottoms from the recovery of the spent solvents and solvent mixtures (F002) and in 2002 shipped corrosive waste (D002) and spent non-halogenated solvents (F005). In 1984, 1990, and 2004, the site was classified as a LQG, in 2006 an SQG, and in 2007 and 2010 a CESQG (EDR 2010; USEPA 2012). No other information related to waste generation was identified in documents available for review.

In March 2000, a Phase I Environmental Site Assessment (ESA) discovered the following Recognized Environmental Concerns (RECs): 55-gallon drums filled with unknown contents, several 20-gallon oil containers, abandoned dry-cleaning machines, VOC-contaminated floor trenches, floor stains, and on-site USTs (CEA 2009; CEA 2011). See Attachment 3 for the REC locations.

## 7.2 Overwater Activities

The site is not adjacent to Newtown Creek or associated waterways. Information regarding overwater activities was not identified in documents available for review.

## 7.3 Spills

Documented spills at the site are summarized as follows:

- On April 11, 1996, a test tank failure resulted in a No. 2 fuel oil release to soil (NYSDEC Spill No. 9600503). The Environmental Data Resources, Inc. (EDR) listing indicates that the volume of the release was minimal, corrective action was taken, and the file was closed by NYSDEC on November 22, 1996 (EDR 2010).
- On March 2, 2006, a spill from abandoned drums at Ingraham Street and Porter Avenue resulted in a release of waste oil to soil (NYSDEC Spill No. 0513812). Corrective action was taken, and the file was closed on March 10, 2006 (EDR 2010).
- On February 17, 2009, a blood pressure monitor broke resulting in a mercury release to air (NYSDEC Spill No. 0812527). Corrective action was taken, and the file was closed on February 19, 2009 (EDR 2010).

# 8 PHYSICAL SITE SETTING

## 8.1 Geology

Geologic conditions at the site have been characterized to depths 16 feet below ground surface (bgs). A 2001 site investigation (SI) report described the surficial geology in the vicinity of the site as layered loose sediment. Soils recovered from the site appear to be loose sandy sediments to approximately 9 feet bgs mixed with demolition debris fill material. From 9 to 16 feet bgs soils are compact sands with some clay and gravel layers (CEA 2011; Action 2002; NYSDEC 2012).

## 8.2 Hydrogeology

Hydrogeologic conditions at the site have been characterized for the unconfined groundwater unit to a depth of 16 feet bgs. Groundwater elevations at the site have been measured in soil borings, piezometers, and monitoring wells. Monitoring well and piezometer locations are shown on Attachment 2. Groundwater depth ranges from 7 feet bgs at the northwest portion of the site, 11 to 11.5 feet bgs across the western portion of the site, and 12 to 12.5 feet bgs across the southeast portion of the site (CEA 2009; NYSDEC 2012). Groundwater elevations from the 2001 site characterization (CEA 2001) and 2002 Pilot Test and Remedial Design Report (Action 2002) are included as Attachments 4 and 5, respectively.

Generally, groundwater at the site flows to the east at a gradient of 0.010 feet per feet, away from English Kills. However, the unconfined water-bearing formation of the upper glacial aquifer creates subsurface permeabilities that vary from fine sand to silt. This creates preferential flow paths in the subsurface which limit the accuracy of the defining groundwater flow directions (Action 2002).

Hydraulic conductivity, based on slug tests, in the shallow groundwater zone ranged from 0.064 feet per day to 4.471 feet per day. Pumping and recovery tests yielded hydraulic conductivity values of 0.005 feet per day to 13.184 feet per day. The geometric mean of the values of the combined slug and recovery tests is 0.314 feet per day (Action 2002).

# 9 NATURE AND EXTENT (CURRENT UNDERSTANDING OF ENVIRONMENTAL CONDITIONS)

In May 2001, a VCP Agreement SI was conducted at the site in accordance with the NYSDEC approved Sampling and Analysis Plan (SAP) dated March 16, 2001. The SI confirmed the presence of subsurface contamination, particularly VOCs at the site above allowable NYSDEC regulatory levels, associated with historical fuel oil and PCE use (CEA 2001).

Based on the findings of the SI, a Remedial Action Work Plan (RAWP), dated September 20, 2001, was prepared. In December 2002, implementation of the RAWP began by preparing and submitting a Pilot Test and Remedial Design Report to NYSDEC. The report included closure of two USTs, hand-excavation and cleaning of impacted soil and solids from floor drainage trenches in the boiler room, and collection of concrete core samples from each of the three areas identified as the source area from the SI report. The report also included installation and implementation of the AS/SVE pilot-test system.

In October 2003, an AS/SVE Engineering Report was submitted, which outlined the final design, installation, and startup of a full-scale AS/SVE system to address groundwater contamination at the site (CEA 2005).

## 9.1 Soil

| | |
|---|---|
| Soil Investigations | ☒ Yes ☐ No |
| Bank Samples | ☐ Yes ☐ No ☒ Not Applicable |
| Soil-Vapor Investigations | ☒ Yes ☐ No |

### *9.1.1 Soil Investigations*

Soil samples were collected as part of the SI in May 2001. Twenty-four soil borings were installed through the concrete slab of the building (CEA 2009). Thirteen soil borings (Locations 7 through 19) were installed in the area of the abandoned dry cleaning machines and 11 were located in the presumed upgradient (Locations 1, 4, 6, and 25) and downgradient (Locations 2, 3, 5, and 20 through 24) groundwater flow directions from the suspected contaminant source. Soil samples were taken from four different intervals: 0 to 4 feet bgs,

4 to 8 feet bgs, 8 to 12 feet bgs, and 12 to 16 feet bgs. Soil boring locations are shown on Attachment 6. Soil samples were analyzed by U.S. Environmental Protection Agency (USEPA) Method 8260 for VOCs, USEPA Method 8270 for SVOCs, and USEPA Methods 6000/7000 for RCRA metals (CEA 2001; Action 2002). Detected results are summarized in the following table:

| Analyte | Units | Minimum Soil Concentration | Maximum Soil Concentration |
|---|---|---|---|
| ***VOCs*** | | | |
| Acetone | ppb | ND | 33,000 |
| Ethylbenzene | ppb | ND | 45 |
| ***CVOCs*** | | | |
| Methylene chloride | ppb | ND | 3,900 |
| Tetrachloroethene | ppb | ND | 150,000 |
| Trichloroethene | ppb | ND | 78 |
| ***SVOCs*** | | | |
| Acenaphthene | ppb | ND | 3,900 |
| Acenaphthylene | ppb | ND | 250 |
| Anthracene | ppb | ND | 7,200 |
| Benzo(a)anthracene | ppb | ND | 14,000 |
| Benzo(a)pyrene | ppb | ND | 11,000 |
| Benzo(b)fluoranthene | ppb | ND | 7,300 |
| Benzo(g,h,i)perylene | ppb | ND | 2,800 |
| Benzo(k)fluoranthene | ppb | ND | 11,000 |
| Bis(2-ethylhexyl)phthalate | ppb | ND | 3,000 |
| Chrysene | ppb | ND | 16,000 |
| Dibenzofuran | ppb | ND | 1,200 |
| Dibenzo(a,h)anthracene | ppb | ND | 250 |
| Di-n-butyl phthalate | ppb | ND | 310 |
| Fluoranthene | ppb | ND | 24,000 |
| Fluorene | ppb | ND | 4,400 |
| Indeno(1,2,3-cd)pyrene | ppb | ND | 1,800 |
| 2-Methylnaphthalene | ppb | ND | 2,000 |
| Napthalene | ppb | ND | 1,100 |
| Phenanthrene | ppb | ND | 29,000 |
| Pyrene | ppb | ND | 29,000 |

| Analyte | Units | Minimum Soil Concentration | Maximum Soil Concentration |
|---|---|---|---|
| ***Metals*** | | | |
| Arsenic | ppb | 1.7 | 140 |
| Barium | ppb | 27.3 | 1,280 |
| Cadmium | ppb | ND | 754 |
| Chromium | ppb | 6.7 | 411 |
| Lead | ppb | 3.7 | 10,100 |
| Mercury | ppb | ND | 3.5 |
| Selenium | ppb | ND | 0.65 |

Notes:
CVOC – chlorinated volatile organic compound
ppb – parts per billion
ND – not detected above method detection limit; detection limits not provided in source documents
SVOC – semi-volatile organic compound
VOC – volatile organic compound

The primary VOCs and CVOCs detected in soil samples were acetone, methylene chloride, and PCE. Generally, concentrations in the soil decreased with depth. The highest VOC concentration detected was at location 15 in 0 to 4 feet bgs (CEA 2001).

The primary SVOCs detected in the soils were benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, butylbenzylphthlate, and chrysene. SVOCs exceeded cleanup objectives in the 12 to 16 feet bgs interval at location 16 (CEA 2001). Total VOC and SVOC soil concentrations at the sampled intervals are shown in Attachments 7 and 8.

### *9.1.2 Soil Vapor Investigations*

In October 2002, as part of the pilot test activities, three SVE wells (SVE-1 through SVE-3), two AS points, and 11 piezometers were installed. Out of the 11 piezometers, 6 shallow piezometers (PS-1B through PS-6B) were installed at 3 to 6 feet bgs to monitor soil vapor pressures and 5 deeper piezometers (PS-1, PS-2, PS-4, PS-5, and PS-6) were installed to 18 feet bgs to monitor both water levels and vapor pressures (Action 2002). Locations of the SVE wells, AS points, and deep piezometers are shown on Attachment 2.

In spring 2003, as part of the full-scale AS/SVE system installation, six SVE wells and 19 AS injection wells were installed (Action 2003).

Since the startup of the AS/SVE system in 2004 (system discussed further in Section 10), the site has been required to complete monthly PID readings for VOCs at the SVE wellheads, AS wellheads, and groundwater monitoring wells. The most current results available were for the reporting period December 1, 2009 through November 30, 2010. The PID readings at the SVE, AS, and groundwater wells were each reported at 0.0 parts per million (ppm; CEA 2011).

On April 29, 2009, four subsurface soil vapor samples (SV-1 through SV-3 and SV-5) were collected from the exterior of the building at the site, and one sub-slab soil vapor sample (SV-4) was collected inside the building. The soil vapor samples were obtained by drilling a 0.5-inch-diameter hole through the concrete to a depth of approximately 2 inches into the soil. Soil vapors were withdrawn using a Summa canister. The Summa canisters were delivered to the laboratory for VOC analysis by USEPA Method TO-15. Several VOCs (benzene, carbon tetrachloride, cis-1,2-dichloroethylene, methyl ethyl ketone, toluene, TCE, PCE, trichlorofluoromethane, trimethylbenzene, and xylenes) were detected (Dermody 2009).

### *9.1.3 Soil Summary*

Soil investigations have been conducted at the site since 2001 and have included soil sampling at 24 locations. COPCs detected at the site include CVOCs, non-chlorinated VOCs, and SVOCs. PCE was the primary contaminant detected; the highest concentrations were detected in the vicinity of the abandoned dry cleaning machines (CEA 2001).

## 9.2 Groundwater

| | | | | | |
|---|---|---|---|---|---|
| Groundwater Investigations | ☒ Yes | ☐ No | | | |
| NAPL Presence (Historical and Current) | ☐ Yes | ☒ No | | | |
| Dissolved COPC Plumes | ☒ Yes | ☐ No | | | |
| Visual Seep Sample Data | ☐ Yes | ☐ No | ☒ Not Applicable | | |

### 9.2.1 Groundwater Investigations

Ten groundwater samples were collected as part of the SI in May 2001. The samples were collected from nine borings in the vicinity of the abandoned dry cleaning machines at 13 feet bgs at Locations 7 through 9 and 12 through 17 (see Attachment 6; CEA 2001).

Groundwater monitoring wells were installed in 2002 and 2003 as part of the RAWP. Five monitoring wells (MW-1 through MW-5) were installed on the perimeter of the property in June 2002, two monitoring wells (MW-6 and MW-7) were installed in October 2002 (MW-7 replaced MW-5, which was damaged), one well (MW-8) was installed in April 2003, and two wells (MW-9 and MW-11) were installed in October 2003 to replace MW-3 and MW-4, which were also damaged during building renovations (Action 2002; CEA 2003). Historical and current monitoring well locations are shown on Attachments 2 and 9, respectively. Sampling of the monitoring wells was conducted shortly after their installation for the 2002 Pilot Test and Remedial Design Report and 2003 AS/SVE System Engineering Report.

### 9.2.2 Dissolved Contaminant Plume

Groundwater samples collected as part of the SI in May 2001 were collected in the surficial aquifer using a Hydrocone® sampler. Samples were analyzed by USEPA Method 8260 for VOCs, USEPA Method 8270 for SVOCs, and USEPA Methods 6000/7000 for RCRA metals (CEA 2001; Action 2002). Detected results from the 2001 sampling event are summarized in the following table:

| Analyte | Units | Minimum Groundwater Concentration | Maximum Groundwater Concentration |
|---|---|---|---|
| ***VOCs*** | | | |
| o-Xylene | ppb | ND | 75 |
| Acetone | ppb | ND | 21 |
| Toluene | ppb | ND | 5.4 |
| ***CVOCs*** | | | |
| Tetrachloroethene | ppb | 12 | 60,000 |
| Methylene chloride | ppb | ND | 4,000 |
| 1,1,1-Trichloroethane | ppb | ND | 79 |
| 1,2-Dichloroethene (cis) | ppb | ND | 3,500 |
| Chloroform | ppb | ND | 14 |

| Analyte | Units | Minimum Groundwater Concentration | Maximum Groundwater Concentration |
|---|---|---|---|
| Trichloroethene | ppb | ND | 530 |
| 1,1-Dichloroethene | ppb | ND | 47 |
| Chlorobenzene | ppb | ND | 22 |
| ***SVOCs*** | | | |
| Acenaphthene | ppb | ND | 8.7 |
| Anthracene | ppb | ND | 1.7 |
| Benzo(a)anthracene | ppb | ND | 3.7 |
| Benzo(a)pyrene | ppb | ND | 4 |
| Benzo(b)fluoranthene | ppb | ND | 4.7 |
| Benzo(g,h,i)perylene | ppb | ND | 3 |
| Benzo(k)fluoranthene | ppb | ND | 5.5 |
| Bis(2-thylhexyl)phthalate | ppb | ND | 13 |
| Chrysene | ppb | ND | 4.7 |
| Dibenzofuran | ppb | ND | 5.3 |
| Diethylphthalate | ppb | ND | 83 |
| Di-n-butyl phthalate | ppb | ND | 27 |
| Fluoranthene | ppb | ND | 13 |
| Fluorene | ppb | ND | 8.7 |
| Indeno(1,2,3-cd)pyrene | ppb | ND | 1.8 |
| 2-Methylnaphthalene | ppb | ND | 40 |
| Napthalene | ppb | ND | 45 |
| Phenanthrene | ppb | ND | 16 |
| Pyrene | ppb | ND | 8.6 |
| ***Metals*** | | | |
| Arsenic | ppb | 12.1 | 343 |
| Barium | ppb | 286 | 9,040 |
| Cadmium | ppb | ND | 205 |
| Chromium | ppb | 88.1 | 2,940 |
| Lead | ppb | 123 | 2,850 |
| Mercury | ppb | 0.64 | 1,080 |
| Selenium | ppb | ND | 5.7 |

Notes:
CVOC – chlorinated volatile organic compound
ppb – parts per billion
ND – not detected above method detection limit, detection limits not provided in the source documents
SVOC – semi-volatile organic compound
VOC – volatile organic compound

Baseline groundwater monitoring events were conducted in June 2002 at MW-2 and MW-5 and October 2002 at MW-1 through MW-6, a pilot test monitoring event was conducted in November 2002 at MW-1 through MW-4, MW-6, and MW-7, and a fourth groundwater monitoring event was conducted in June 2003 at MW-1 through MW-4 and MW-6 through MW-8. Samples were analyzed for VOCs, SVOCs, and total and dissolved RCRA 8 metals. The total CVOCs in the groundwater during the October and November 2002 sampling event are depicted in Attachment 11. Selected results from the 2002/2003 sampling event are summarized in the following table:

| Analyte | Units | Minimum Groundwater Concentration | Maximum Groundwater Concentration |
|---|---|---|---|
| ***CVOCs*** | | | |
| 1,2-Dichloroethene (cis) | ppb | 0.84 | 5,700 |
| Vinyl Chloride | ppb | 1.70 | 1,700 |
| Methylene Chloride | ppb | ND (3.0) | 400 |
| Tetrachloroethene | ppb | 1.5 | 30,000 |
| Trichloroethene | ppb | ND (1.0) | 1,300 |
| ***VOCs*** | | | |
| Acetone | ppb | ND (25.0) | 580 |
| ***Metals*** | | | |
| Barium | ppb | ND (32.0) | 246 |
| Cadmium | ppb | ND (0.4) | 0.53 |
| Chromium | ppb | ND (2.8) | 33.7 |
| Lead | ppb | ND (2.2) | 34.1 |
| Selenium | ppb | ND (3.9) | 8.1 |

Notes:
µg/L – microgram per liter
CVOC – chlorinated volatile organic compound
ND – not detected (method detection limit)
ppb – parts per billion
VOC – volatile organic compound

Since the startup of the AS/SVE system in 2004 (system discussed in Section 10), the site has conducted semi-annual groundwater monitoring at six monitoring wells (MW-1, MW-2, and MW-6 through MW-9) and reports the results to NYSDEC (see Attachment 9; CEA 2005). Groundwater is analyzed for turbidity, temperature, dissolved oxygen, CVOCs (including

methylene chloride, cis-1,2-dichloroethene, PCE, TCE, vinyl chloride, chloromethane, and 1,1-dichloroethene), and metals (CEA 2009). SVOCs were removed from the analytical requirements with NYSDEC approval in July 2005 (CEA 2005). The sampling event in April 2010 detected arsenic and chromium above the groundwater quality standards (CEA 2011). Attachment 12 contains a summary table of the VOC analytical results from groundwater monitoring events from June 2002 through October 2010. Groundwater monitoring results for the site show a net removal of CVOCs from the site (CEA 2011).

### *9.2.3 Groundwater Summary*

Groundwater investigations have been conducted at the site since 2001 and have included groundwater monitoring of up to ten monitoring wells. The general groundwater flow directions in the vicinity of the site are to the east, away from English Kills. Groundwater COPCs detected include VOCs (both CVOCs and SVOCs) and metals. Since the installation and startup of the AS/SVE system in 2004, SVOCs have been removed from the groundwater monitoring program and monitoring results through October 2010 have shown a net removal of CVOCs (CEA 2011). Discussion of the AS/SVE system is provided in Section 10.

## 9.3 Surface Water

| | | |
|---|---|---|
| Surface Water Investigation | ☐ Yes | ☒ No |
| SPDES Permit (Current or Past) | ☐ Yes | ☒ No |
| Industrial Wastewater Discharge Permit (Current or Past) | ☒ Yes | ☐ No |
| Stormwater Data | ☐ Yes | ☒ No |
| Catch Basin Solids Data | ☐ Yes | ☒ No |
| Wastewater Data | ☒ Yes | ☐ No |

### *9.3.1 Stormwater and Wastewater Systems*

Information regarding on-site infrastructure was not identified in documents available for review. This site is within the Newtown Creek WPCP sewershed. Stormwater and wastewater discharges from the site flow into a combined municipal sewer system. When the combined flows exceed the system's capacity, untreated CSOs are discharged to English Kills at Outfall NC-015, a tributary to Newtown Creek (NYCDEP 2007).

### *9.3.2 Industrial Wastewater Discharge Permit*

The site had an IWD Permit No. P-513 from 1987 to 1995 (NYCDEP 1987, 1995). The permits and wastewater Discharge Monitoring Reports were not identified in documents available for review.

The site has a permit to discharge treated groundwater from the SVE/AS system to the New York City sewer system, and a renewal application was submitted to NYCDEP in December 2010 (CEA 2011). Moisture from the SVE influent air stream is treated through granular activated carbon (GAC), accumulated in a 350-gallon holding tank, and gravity fed into the on-site sanitary sewer connection (Action 2002; CEA 2009). Discharge sampling is performed on an annual basis. Grab samples are collected directly from the discharge pipe of the SVE system. The analytical results are compared to the NYCDEP Limitations for Effluent to Sanitary or Combined Sewers. Permit parameters and limitations are summarized as follows (CEA 2009):

| Permit Type | Permit Number | Effective Date | Outfalls | Volume | Frequency-Parameters (Limit) |
|---|---|---|---|---|---|
| Unknown | File Case C-3348 (Action 2002) | Approximately 2003 | Sewer Discharge 08 (SVE/GAC Effluent) | 1,500 gpd | Monthly instantaneous – Flow |
| | | | | | Annual grab – Oil and Grease (50,000 ppb Daily Maximum) |
| | | | | | Annual grab – pH (5.0 – 11.0) |
| | | | | | Annual grab – Benzene (134 ppb Daily Maximum) |
| | | | | | Annual grab – Toluene (74 ppb Daily Maximum) |
| | | | | | Annual grab – Total Xylenes (74 ppb Daily Maximum) |
| | | | | | Annual grab – Ethylbenzene (380 ppb Daily Maximum) |
| | | | | | Annual grab – Cadmium (2,000 ppb Daily Maximum) |
| | | | | | Annual grab – Hexavalent Chromium (5,000 ppb Daily Maximum) |
| | | | | | Annual grab – Copper (5,000 ppb Daily Maximum) |
| | | | | | Annual grab – Lead (2,000 ppb Daily Maximum) |
| | | | | | Annual grab – Mercury (50 ppb Daily Maximum) |
| | | | | | Annual grab – Nickel (3,000 ppb Daily Maximum) |
| | | | | | Annual grab – Zinc (5,000 ppb Daily Maximum) |
| | | | | | Annual grab – Flashpoint (>140°F Daily Maximum) |
| | | | | | Annual grab – Total Suspended Solids (350,000 ppb Daily Maximum) |
| | | | | | Annual grab – PCE (20 ppb Daily Maximum) |
| | | | | | Annual grab – MTBE (50 ppb Daily Maximum) |
| | | | | | Annual grab – Napthalene (47 ppb Daily Maximum) |

Notes:
GAC – granular activated carbon
gpd – gallon per day
MTBE – Methyl Tertiary Butyl Ether
PCE – tetrachloroethene
ppb – parts per billion
SVE – Soil Vapor Extraction

### *9.3.3 Sampling Data*

Since the condensate discharge was approved in approximately 2003, the site has submitted an Annual Report containing the effluent sampling results from the SVE system GAC treatment unit prior to discharge to the New York City sewer system. No exceedances of the NYCDEP Limitations for Effluent to Sanitary of Combined Sewers have been identified in the available documentation (CEA 2011).

### *9.3.4 Surface Water Summary*

There is no data available for stormwater discharges. IWD permits located for this site have expired (NYCDEP 1987, 1995). The site has been discharging effluent from a SVE and GAC treatment system to the City of New York sewer system since approximately 2003 (CEA 2011). Initial discharges were authorized by NYCDEP and a permit was issued to the site.

No exceedances of the NYCDEP Limitations for Effluent to Sanitary of Combined Sewers have been identified in the available documentation (CEA 2011).

## 9.4 Sediment

Creek Sediment Data ☐ Yes ☐ No ☒ Not Applicable

Information regarding sediment investigations was not identified in documents available for review.

## 9.5 Air

Air Permit ☒ Yes ☐ No

Air Data ☒ Yes ☐ No

### *9.5.1 Air Permit*

Air emissions from the AS/SVE system are permitted by the NYCDEP under installation number PB012203H. PID readings are taken at the emission point on the roof, 62 feet above

street level (Action 2003; CEA 2005). No further information regarding air emissions from the site was identified in documents available or review.

### *9.5.2 Air Data*

Ambient air monitoring for VOCs was performed prior to site work and during work activities using a PID. PID measurements did not exceed 15 ppm for 10 consecutive minutes at any time during monitoring either downgradient or upgradient of the remedial activities (Action 2002).

On April 29, 2009, during the soil vapor collection efforts, one outdoor ambient air sample (OA-1) was collected. Several VOCs were detected in the outdoor sample including carbon tetrachloride, methylene chloride, methyl ethyl ketone, PCE, toluene, and trichlorofluoromethane (Dermody 2009).

## 10 REMEDIATION HISTORY (INTERIM REMEDIAL MEASURES AND OTHER CLEANUPS)

In 2003, remedial actions completed consisted of removal and disposal of abandoned drums of dry cleaning solvent and dry cleaning machines, excavation and disposal of VOC-contaminated concrete, soil, and trench solids, installation of a vapor barrier over residual soil contamination, design and installation of an AS/SVE system to treat the PCE- and TCE-contaminated groundwater and soil vapor, and legal closure of USTs (CEA 2009, 2011; NYSDEC 2012).

The AS/SVE system installed in 2004 includes an AS unit, SVE wells, SVE condensate treatment unit, and off-gas treatment system. The condensate treatment system is made up of a 5-gallon-per-minute (gpm) transfer pump, bag filter, two activated carbon units, and a 350-gallon holding tank. The off-gas system consists of vapor phase carbon units in series (Action 2002, 2003). Attachments 13 and 14 depict the AS/SVE system layout and SVE process schematic. Treated groundwater is discharged to the New York City sanitary sewer system. The discharge has been permitted through NYCDEP. Sampling and analysis of the discharge is conducted semi-annually and reported annually. No exceedances of the

NYCDEP Limitations for Effluent to Sanitary of Combined Sewers have been identified in the available documentation (CEA 2011).

Approximately 4,100 cubic yards of residual soil contamination in excess of Soil Cleanup Objectives remains on site beneath the concrete foundation. This residual zone is located along the southern boundary of the building and extends from 4 to 11 feet bgs (see Attachment 15). The CVOC and SVOC residual contaminated soil is covered with a high-density polyethylene (HDPE) vapor barrier, 4 feet of clean soil, and a 4-inch concrete slab (CEA 2009).

The site is currently operating under a Site Management Plan (SMP). Ongoing groundwater monitoring is performed monthly and semi-annually. Approximately 102 pounds of PCE and 5 pounds of TCE have been removed from the site since the AS/SVE system has been in-place (CEA 2011).

## 11 BIBLIOGRAPHY/INFORMATION SOURCES

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## 12 ATTACHMENTS

### Figures

Figure 1 Site Vicinity Map: Cornish Knit Goods/Cornish Mini-Malls

### Tables

Table 1 Potential Areas of Concern and Transport Pathways Assessment

### Supplemental Attachments

Attachment 1 Figure 2: General Site Layout (Action 2002)
Attachment 2 Figure 4: Phase I and Phase II Remedial Effort (Action 2002)
Attachment 3 Figure 2: First Floor Schematic (CEA 2001)
Attachment 4 Figure 11: Groundwater Contour Map (CEA 2001)
Attachment 5 Figure 5: Groundwater Elevations, October 27, 2002 (Action 2002)
Attachment 6 Figure 6: Sample Collection Locations (CEA 2001)
Attachment 7 Figures 14, 15, and 16: Total VOC Concentrations in Soil at 0-4 Foot Interval, 4-8 Foot Interval, 8-12 Foot Interval (CEA 2001)

| | |
|---|---|
| Attachment 8 | Figures 17, 18, 19 and 20: Total SVOC Concentrations in Soil at 0-4 Foot Interval, 4-8 Foot Interval, 8-12 Foot Interval, 12-16 Foot Interval (CEA 2001) |
| Attachment 9 | Figure 8: Monitoring Well Locations (CEA 2009) |
| Attachment 10 | Figure 22: PERC Groundwater Contaminant Plume (CEA 2001) |
| Attachment 11 | Figures 6 and 7: Total CVOCs in Groundwater, October 17, 2002 and November 1, 2002 (Action 2002) |
| Attachment 12 | Table 1: Operating Period – December 1, 2009 through November 30,2010. Analytical Results Summary – Groundwater (CEA 2011) |
| Attachment 13 | Figure 4: Air Sparge and Soil Vapor Extraction System Layout (As-Built; Action 2003) |
| Attachment 14 | Figure 6: Soil Vapor Extraction System Process Schematic (As-Built; Action 2003) |
| Attachment 15 | Figure 3: Residual Contaminated Soil (CEA 2009) |

## Table 1

## Potential Areas of Concern and Transport Pathways Assessment – Cornish Knit Goods/Cornish Mini-Malls

| Potential Areas of Concern | Media Impacted | | | | | COPCs | | | | | | | | | | | | | | Potential Complete Pathway | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | TPH | | | VOCs | | | | | | | | | | | | | | | | | | |
| Description of Areas of Concern | Surface Soil | Subsurface Soil | Groundwater | Catch Basin Solids | Creek Sediment | Gasoline-Range | Diesel – Range | Heavier – Range | Petroleum Related (e.g., BTEX) | VOCs | Chlorinated VOCs | SVOCs | PAHs | Phthalates | Phenolics | Metals | PCBs | Herbicides and Pesticides | Dioxins/Furans | Overland Transport | Groundwater | Direct Discharge – Overwater | Direct Discharge – Storm/Wastewater | Discharge to Sewer/CSO | Bank Erosion | Air Releases |
| Textile Manufacturer (including children outerwear manufacturing) (circa 1925 – 1980) | ? | ? | ? | ? | ? | ? | ? | ? | ? | √ | √ | √ | ? | ? | ? | √ | ? | ? | ? | -- | √ | -- | ? | ? | -- | ? |
| Dry Cleaning Operations (1980 – 1995) | √ | √ | √ | ? | ? | ? | ? | ? | ? | √ | √ | √ | ? | ? | ? | √ | ? | ? | ? | -- | √ | -- | ? | ? | -- | ? |
| Vehicle scrap yard (1980 – 1995) | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | -- | ? | -- | ? | ? | -- | ? |
| Hazardous waste accumulation areas | √ | √ | √ | ? | ? | ? | ? | ? | ? | √ | √ | √ | ? | ? | ? | √ | ? | ? | ? | -- | √ | -- | ? | ? | -- | ? |
| Former USTs | ? | ? | ? | ? | ? | √ | ? | ? | √ | ? | ? | ? | ? | ? | ? | ? | √ | ? | ? | -- | ? | -- | ? | ? | -- | ? |
| Spills | ? | ? | ? | ? | ? | √ | ? | ? | √ | ? | ? | ? | ? | ? | ? | √ | ? | ? | ? | -- | ? | -- | ? | ? | -- | ? |
| Products and equipment used for a shelter and rehabilitation center | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | -- | ? | -- | ? | ? | -- | ? |

Notes:
√ – COPCs are/were present in areas of concern having a current or historical pathway that is determined to be complete or potentially complete.
? – There is not enough information to determine if COPC is/was present in area of concern or if pathway is complete.
-- – Current or historical pathway has been investigated and shown to be not present or incomplete.

BTEX – benzene, toluene, ethylbenzene, and xylene
COPC – constituent of potential concern
CSO – combined sewer overflow
PAH – polycyclic aromatic hydrocarbon
PCB – polychlorinated biphenyl
SVOC – semi-volatile organic compound
TPH – total petroleum hydrocarbon
UST – underground storage tank
VOC – volatile organic compound


Q:\Jobs\110782-01_NewTownCreek\Maps\RI_RemedialInvestigation\Historic_Data_Research\Site Features.Mapbook.mxd ckiblinger 5/23/2012 4:52:22 PM

- USEPA Sample Locations (Surface and Subsurface)
- Shoreline (NYC Dept. of Information Technology, 2006)
- USGS Nat'l Elev. Dataset 5-foot Contours
- Selected Site Property Boundary
- Neighboring Site Property Boundary

Outfall Class

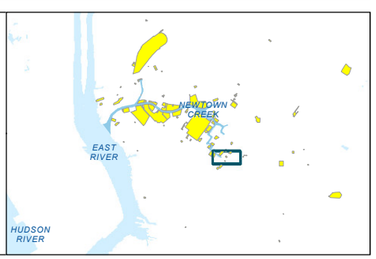
- Direct Discharge
- General
- Highway Drain
- Major Stormwater Outfall
- SPDES
- Storm Drain

**NOTES:**

1. Outfall Labeling: BB: Bowery Bay; NC(B/Q): Newtown Creek, Brooklyn/Queens; ST: Stormwater.
2. Outfall locations are preliminary, compiled, estimated data based on New York City Department of Environmental Protection (NYCDEP) maps and tabulated data and other resources. Many outfall locations were taken from the New York City Shoreline Survey Program: Newtown Creek Water Pollution Control Plant Drainage Area, NYCDEP, March 31, 2003. Other locations were taken from an excerpt from a similar report from 2008 (the complete report was not included in files available for review). Finally, some outfall locations were inherited from previous Anchor QEA and Newtown Creek Project work. Latitudinal and longitudinal data provided in the 2003 and 2008 NYCDEP reports were rounded to the nearest second. This resulted in potential outfall location discrepancies of up to approximately 200 feet. All outfall locations are currently under field verification.
3. Aerial Photos: New York State Division of Homeland Security and Emergency Services, 2010.
4. Site Boundaries are based on New York City parcels data.
5. Coarse topographic contours are derived from U.S. Geological Survey 10-meter data.

Feet

0 100 200 300 400




ANCHOR QEA

*DRAFT*

**Figure 1**
Site Vicinity Map
Draft Upland Site Summary: Cornish Knit Goods/Cornish Mini-Malls
Newtown Creek RI/FS

# SUPPLEMENTAL ATTACHMENTS

Attachment 1

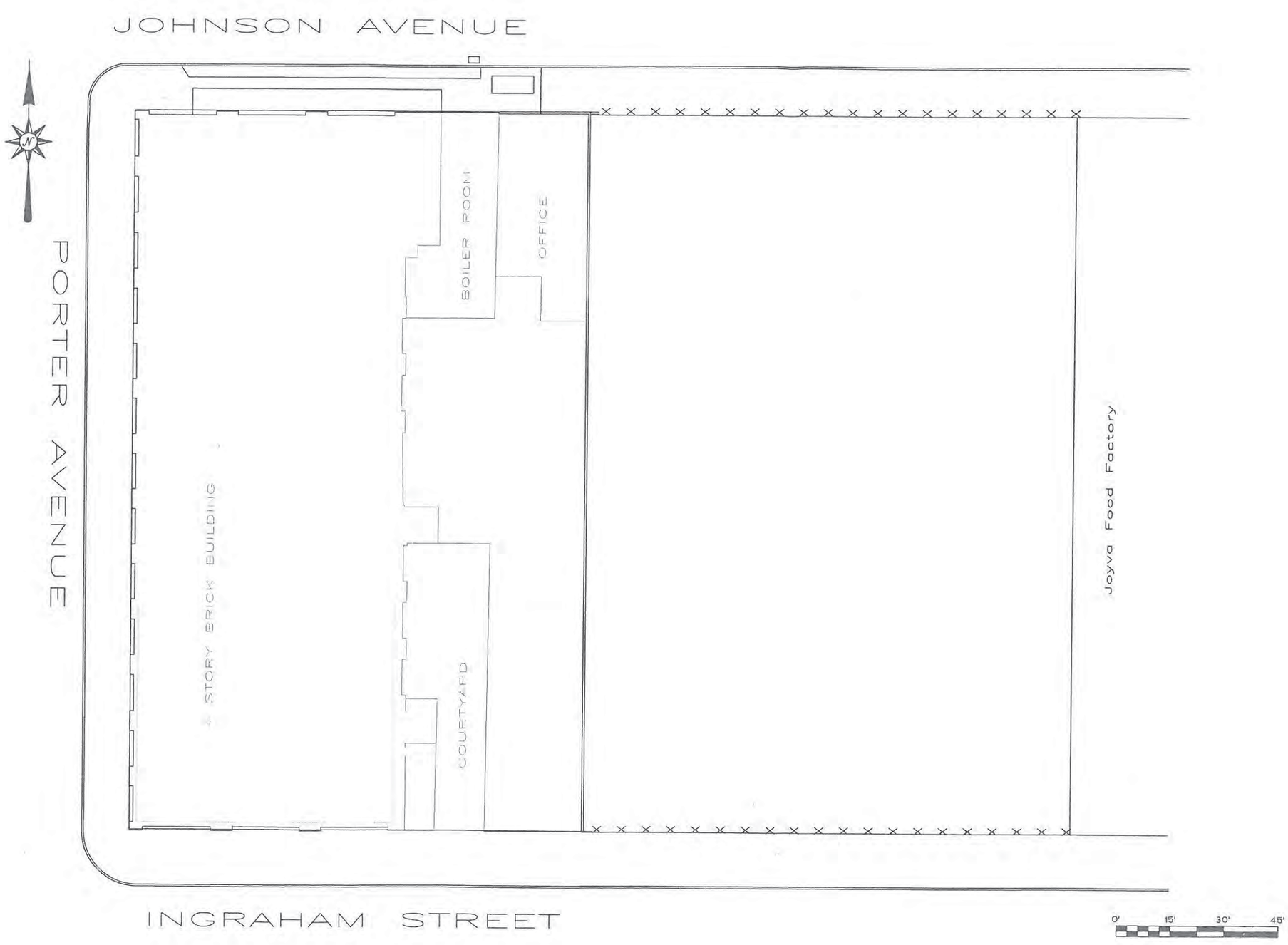



FIGURE 2

GENERAL SITE LAYOUT

PORTER AVENUE
TRANSITIONAL RESIDENCE
BROOKLYN, NEW YORK

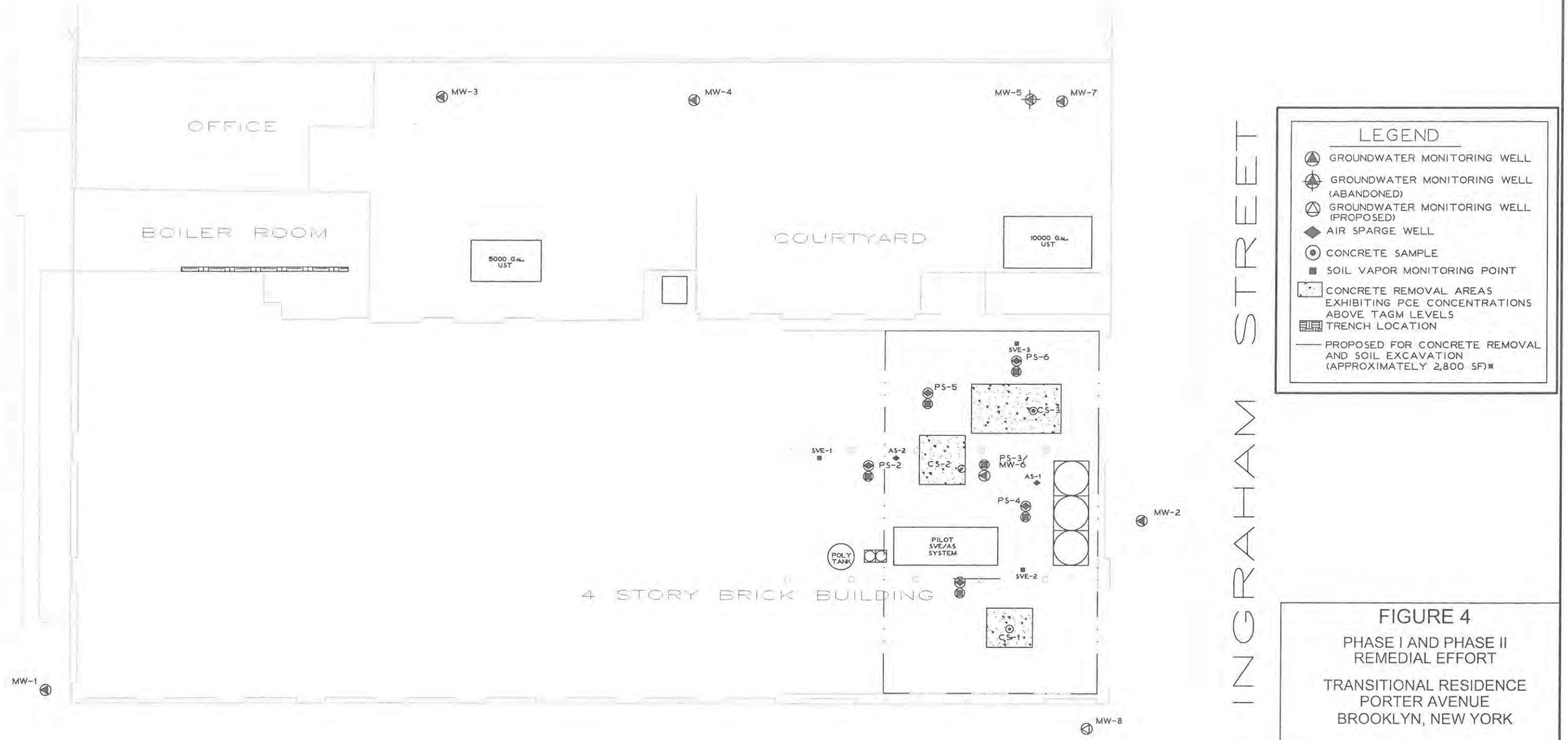
DECEMBER 2002

| | |
|---|---|
| PROJECT NO.: | 302-1720 |
| DRAWN BY: | DLH |
| APPROVED BY: | GS |

ACTION ENGINEERING, INC.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
859-294-5155

Porter Avenue\Pilot Test & Remedial Design\Figure 2

Attachment 2




# FIGURE 4

PHASE I AND PHASE II REMEDIAL EFFORT

TRANSITIONAL RESIDENCE
PORTER AVENUE
BROOKLYN, NEW YORK

DECEMBER 2002

| | |
|---|---|
| PROJECT NO.: | 302-1720 |
| DRAWN BY: | DLH |
| APPROVED BY: | GS |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LEXINGTON, KY 40509
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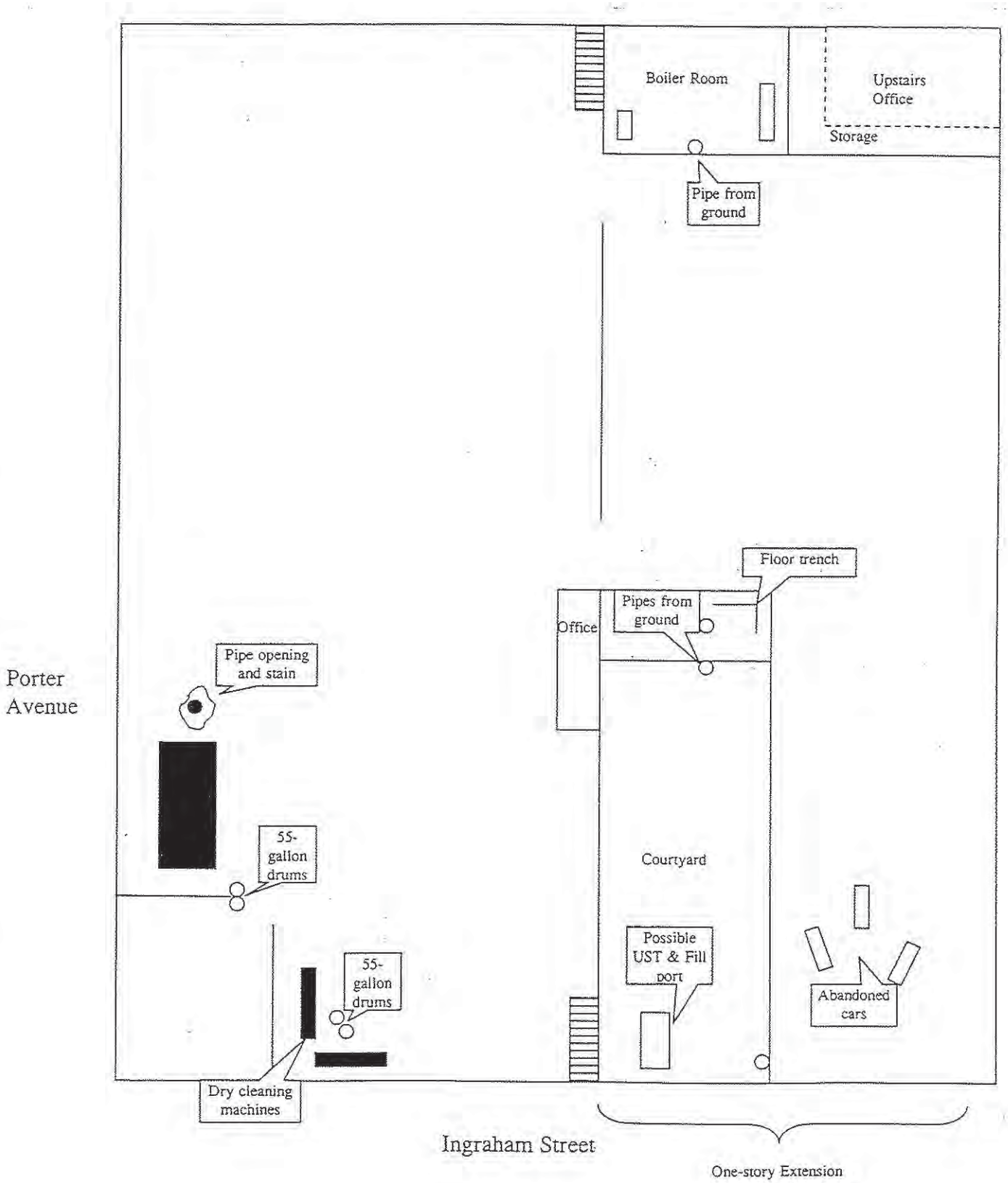
PORTER AVENUE\TEST & REMEDIAL DESIGN\FIGURES\FIGURE 4

Attachment 3




CARPENTER ENVIRONMENTAL ASSOCIATES, Inc.
CEA ENGINEERS, P.C.

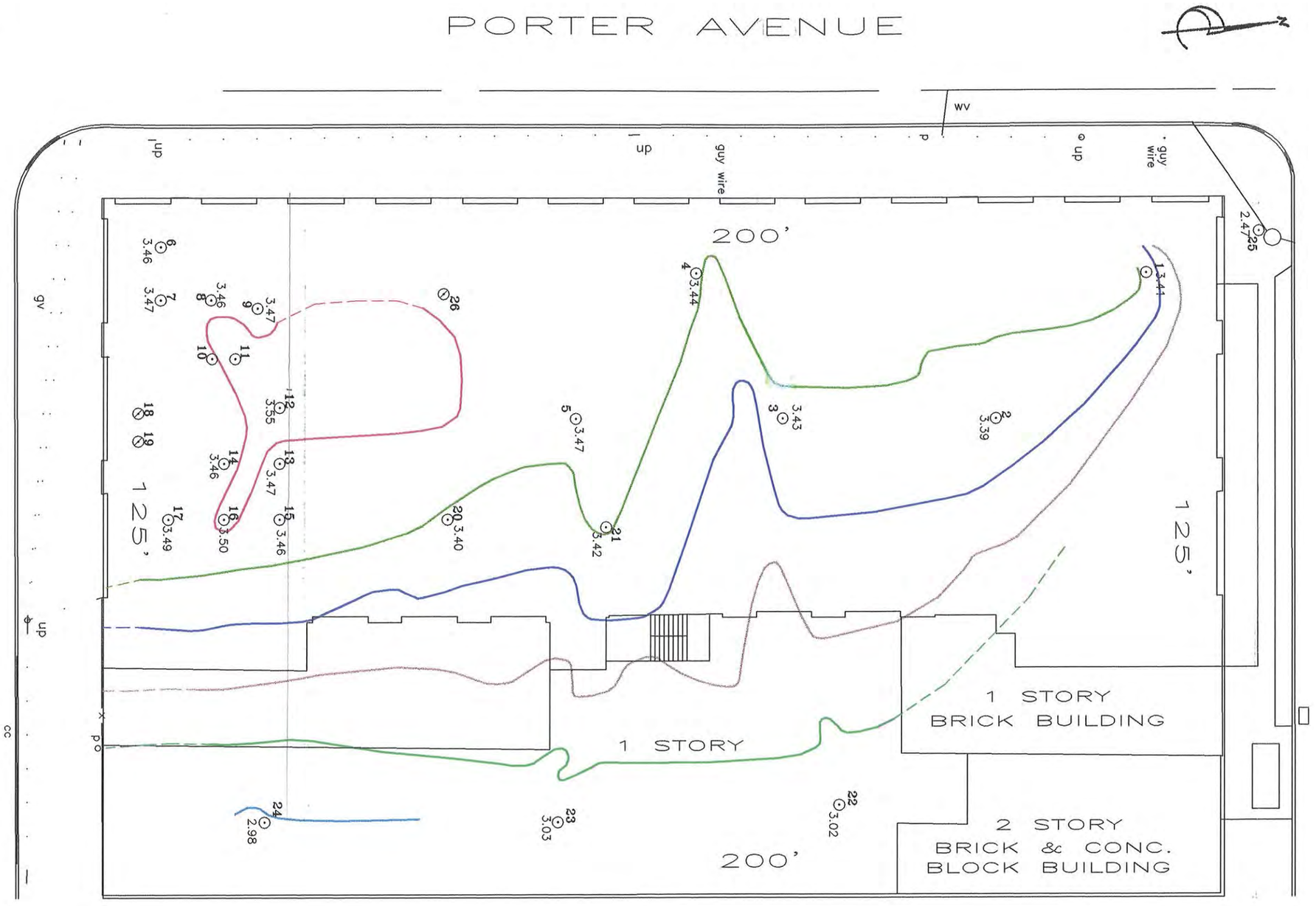
First Floor Schematic
89–111 Porter Avenue
Brooklyn, New York

FIGURE 2
DATE: 6/21/01
FILE: 00037fig02.dwg
SCALE: N.T.S.

Attachment 4

PORTER AVENUE

INGRAHAM STREET




LEGEND

00 ⊙ Sample Locations

3.5

3.4

3.3

3.2

3.1

3.0

NOTE: Broken Contour Lines are Assumed

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Groundwater Contour Map
89–111 Porter Avenue
Brooklyn, NY

FIGURE 11

DATE: 6/27/01

FILE: 00037fig11.dwg

SCALE: 1" = 20'

Attachment 5

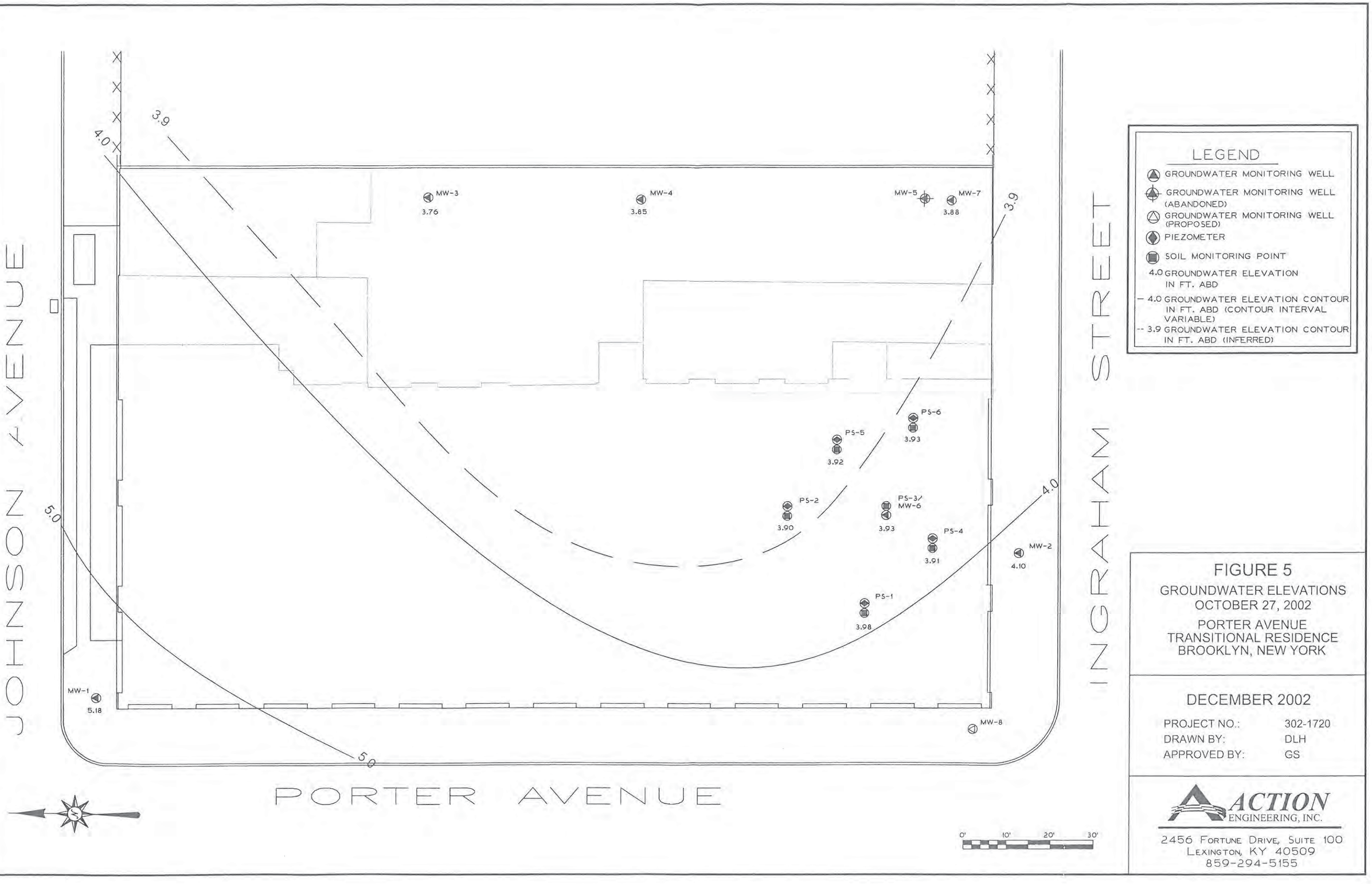


FIGURE 5

GROUNDWATER ELEVATIONS
OCTOBER 27, 2002

PORTER AVENUE
TRANSITIONAL RESIDENCE
BROOKLYN, NEW YORK

DECEMBER 2002

| | |
|---|---|
| PROJECT NO.: | 302-1720 |
| DRAWN BY: | DLH |
| APPROVED BY: | GS |


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T:\TEST & REMEDIAL DESIGN\FIGURES\FIGURE 5 PORTER AVENUE

Attachment 6

PORTER AVENUE

INGRAHAM STREET

4 STORY BRICK BUILDING

BOILER ROOM

OFFICE

LEGEND

⊙ Sample Locations

1⊙ Sample ID

Dry Cleaning Machine

City of New York, County of Kings, Tax Lot 1, Survey by Montrose Surveying, INC., Richmond Hill, NY

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Site Investigation
Sample Collection Locations
89-111 Porter Avenue

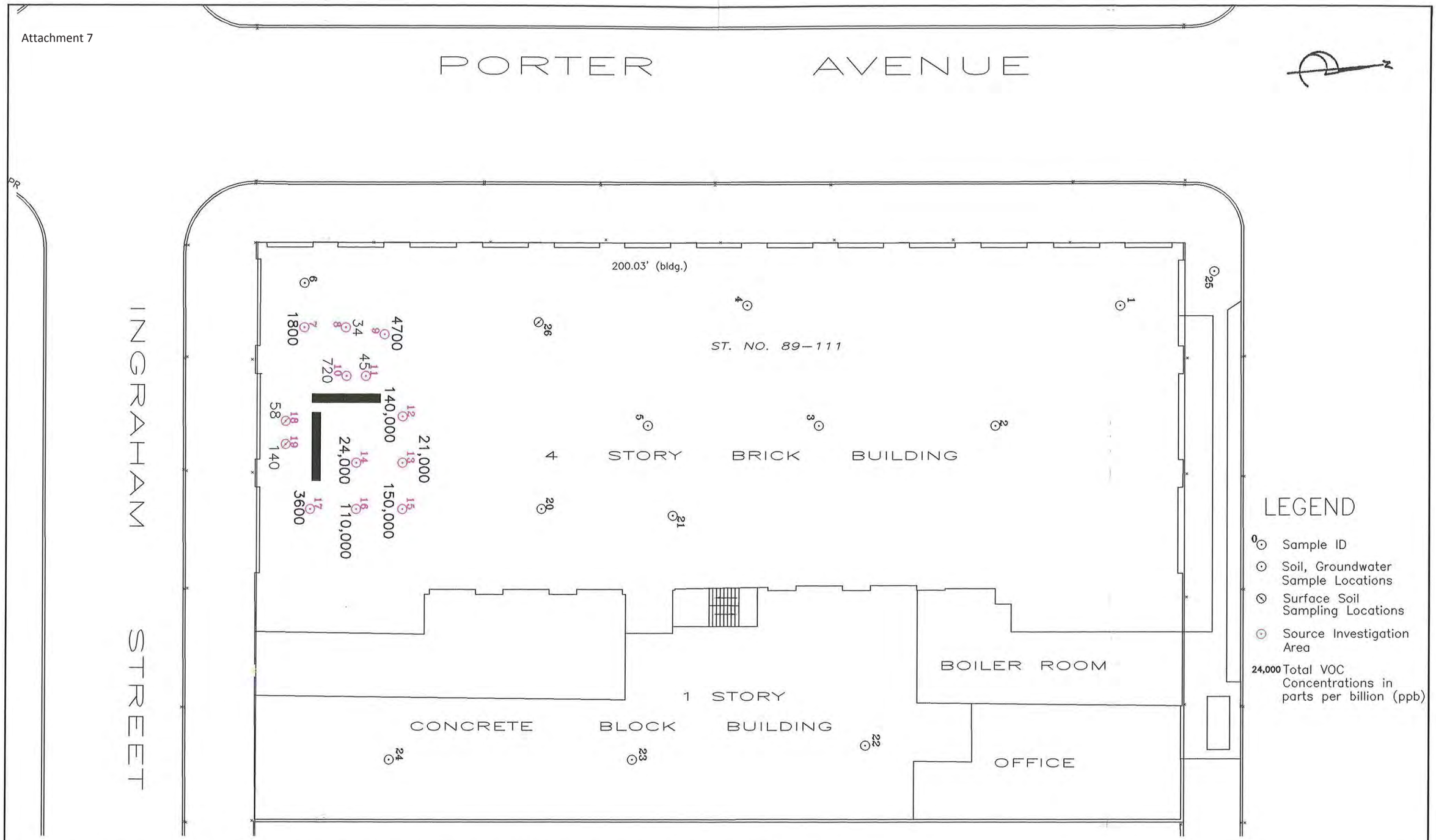
FIGURE 6

DATE: 6/21/01

FILE: 00037fig06.dwg

SCALE: 1" = 20'

Attachment 7




Source: City of New York, County of Kings, Tax Lot 1, Survey by Montrose Surveying, INC., Richmond Hill, NY

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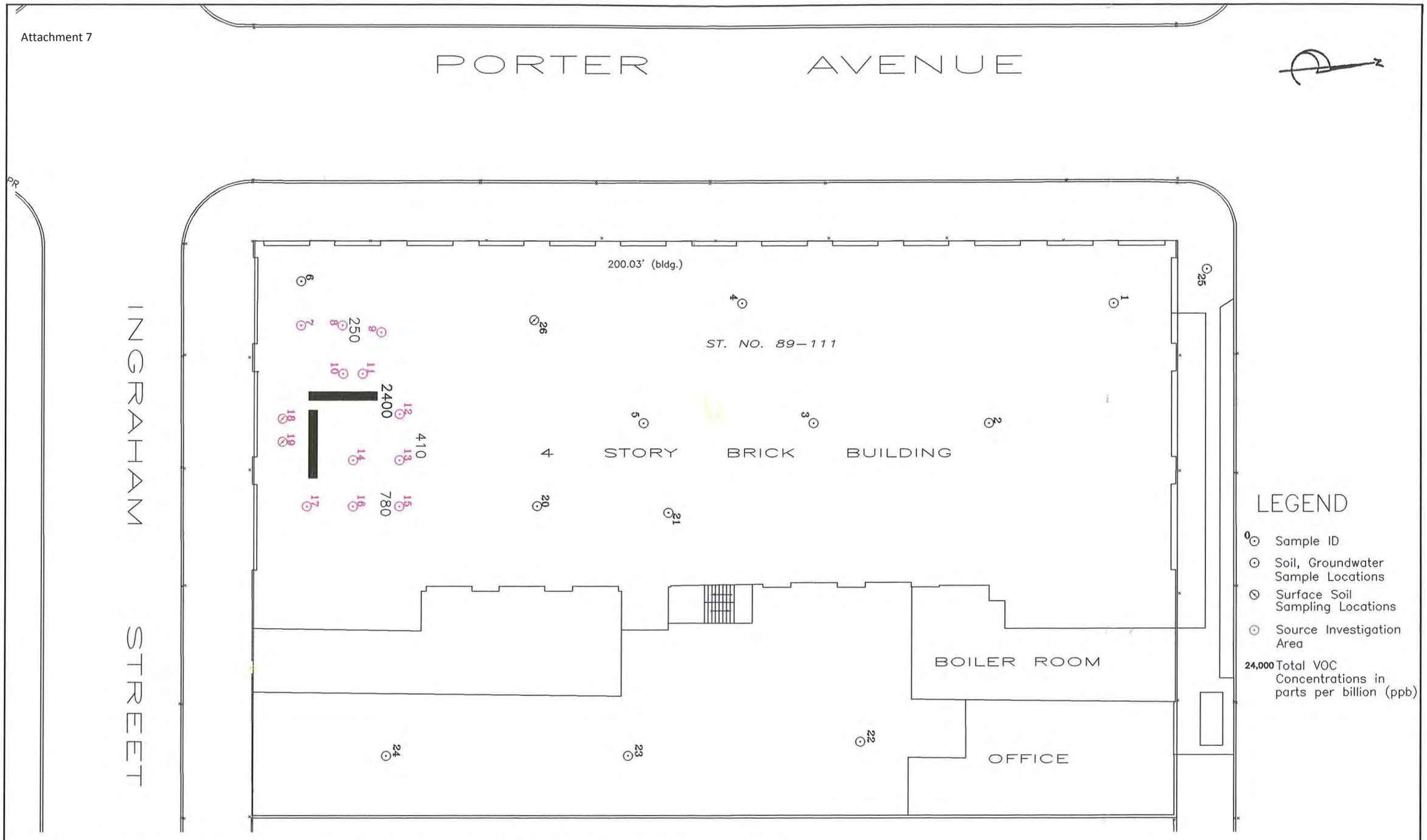
CEA ENGINEERS, P.C.

Source Investigation
Site Investigation
Total VOC Concentrations in Soil (0–4 Foot Interval)
89–111 Porter Avenue

FIGURE 14

DATE: 6/27/01
FILE: 00037fig14.dwg
SCALE: 1" = 20'

Attachment 7




Source: City of New York, County of Kings, Tax Lot 1, Survey by Montrose Surveying, INC., Richmond Hill, NY

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CEA ENGINEERS, P.C.

Source Investigation
Site Investigation
Total VOC Concentrations in Soil (4–8 Foot Interval)
89–111 Porter Avenue

FIGURE 15

DATE: 6/27/01
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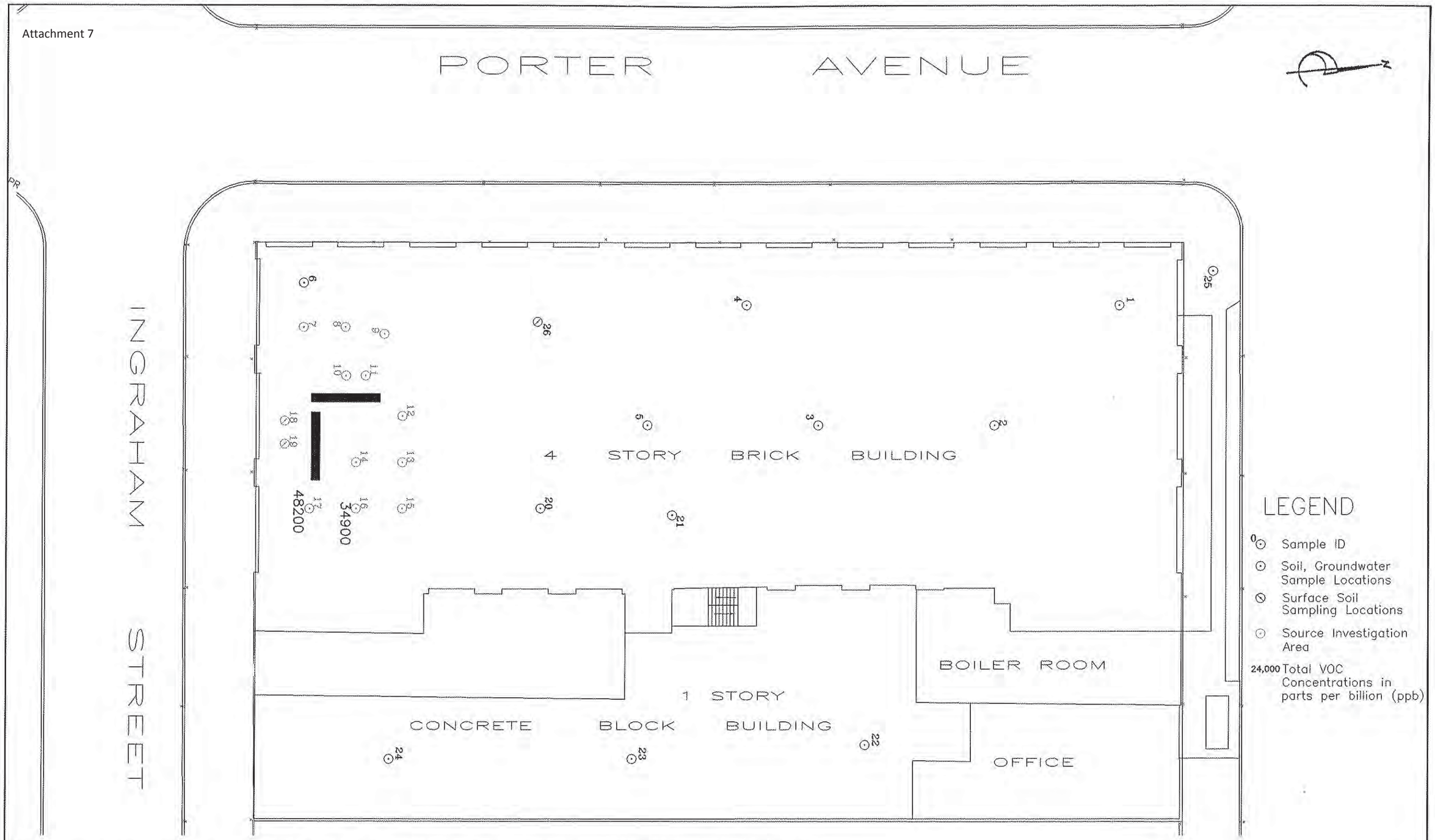
SCALE: 1" = 20'

Attachment 7




Source: City of New York, County of Kings, Tax Lot 1, Survey by Montrose Surveying, INC., Richmond Hill, NY

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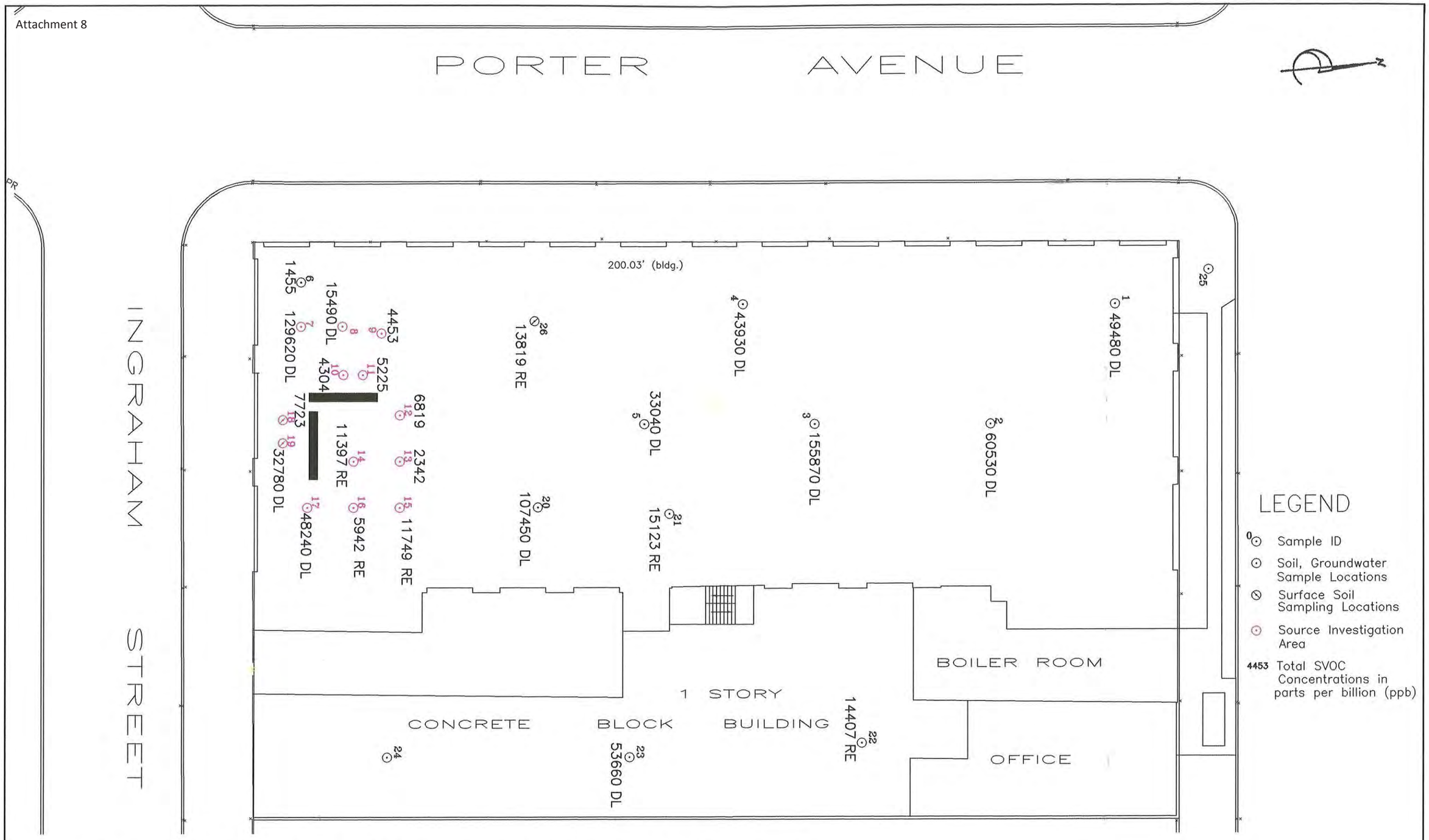
CEA ENGINEERS, P.C.

Source Investigation
Site Investigation
Total VOC Concentrations in Soil (8–12 Foot Interval)
89–111 Porter Avenue

FIGURE 16

DATE: 6/27/01
FILE: 00037fig16.dwg
SCALE: 1" = 20'

Attachment 8




Source: City of New York, County of Kings, Tax Lot 1, Survey by Montrose Surveying, INC., Richmond Hill, NY

CARPENTER ENVIRONMENTAL ASSOCIATES, Inc.
CEA ENGINEERS, P.C.

Source Investigation
Site Investigation
Total SVOC Concentrations in Soil (0–4 Foot Interval)
89–111 Porter Avenue

FIGURE 17

DATE: 6/29/01
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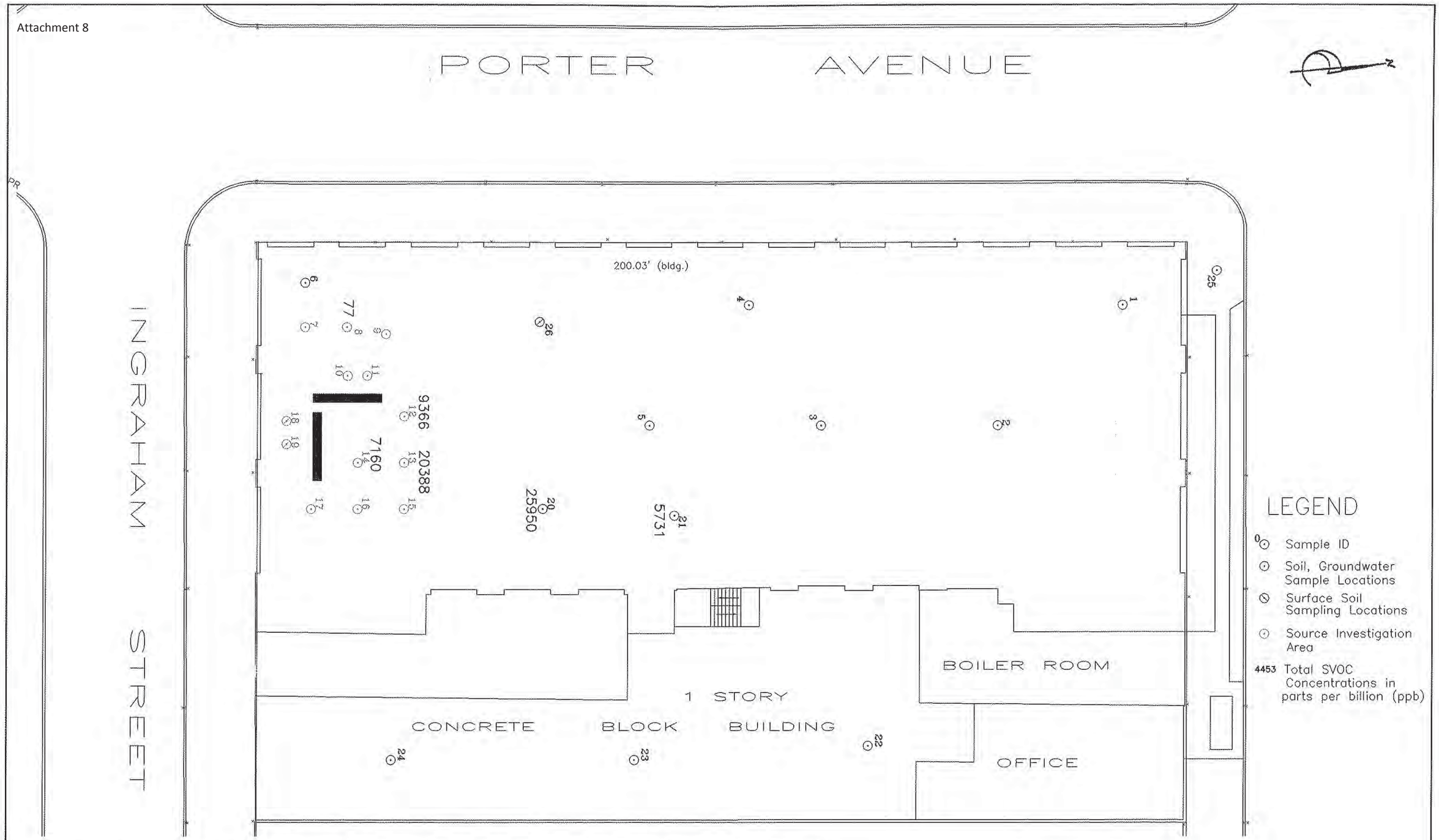
Attachment 8




Source: City of New York, County of Kings, Tax Lot 1, Survey by Montrose Surveying, INC., Richmond Hill, NY

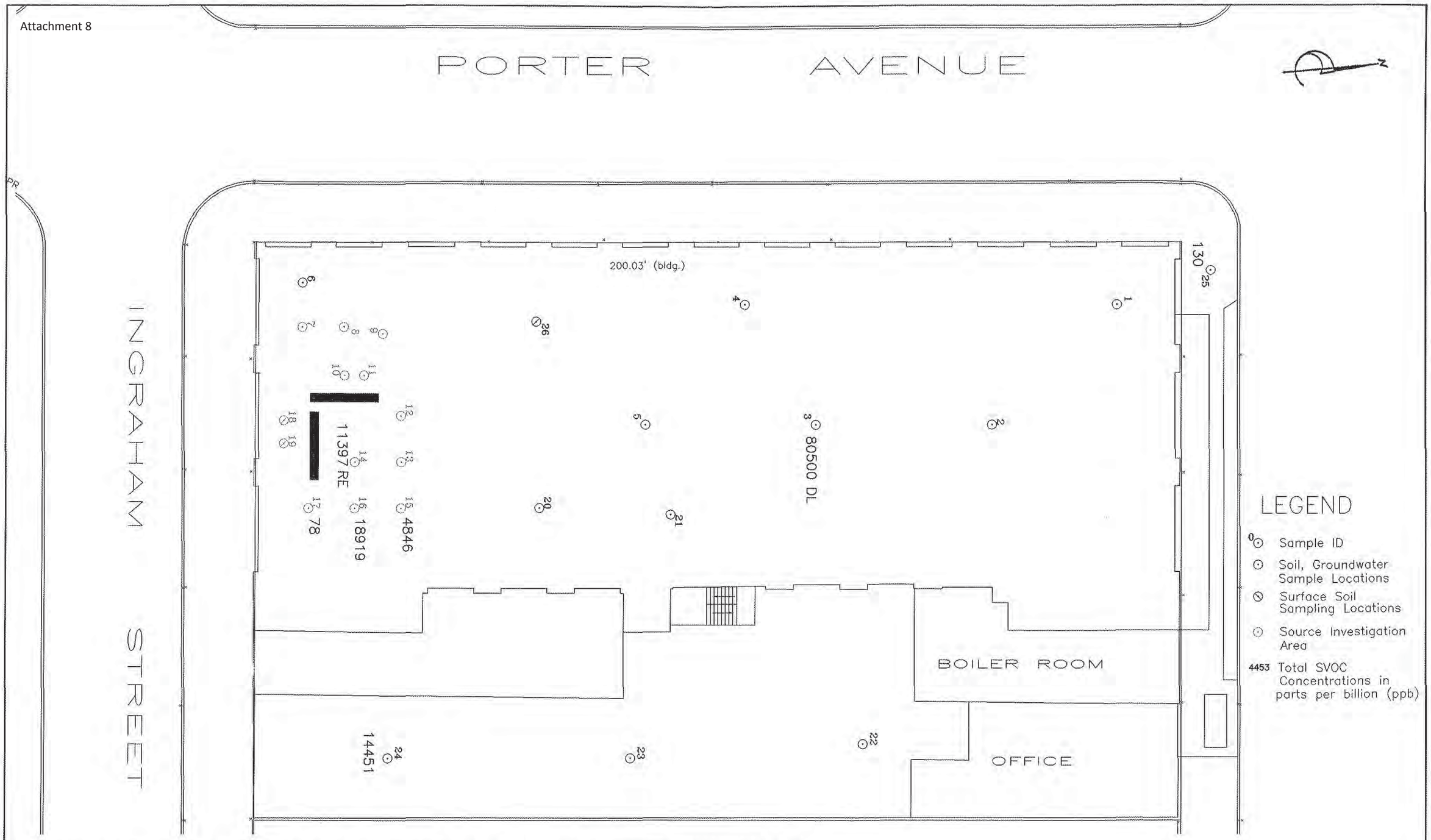
CARPENTER ENVIRONMENTAL ASSOCIATES, Inc.
CEA ENGINEERS, P.C.

Source Investigation
Site Investigation
Total SVOC Concentrations in Soil (4–8 Foot Interval)
89–111 Porter Avenue

FIGURE 18

DATE: 6/29/01
FILE: 00037fig18.dwg
SCALE: 1" = 20'

Attachment 8




Source: City of New York, County of Kings, Tax Lot 1, Survey by Montrose Surveying, INC., Richmond Hill, NY

CARPENTER ENVIRONMENTAL ASSOCIATES, Inc.
CEA ENGINEERS, P.C.

Source Investigation
Site Investigation
Total SVOC Concentrations in Soil (8–12 Foot Interval)
89–111 Porter Avenue

FIGURE 19

DATE: 6/29/01
FILE: 00037fig19.dwg
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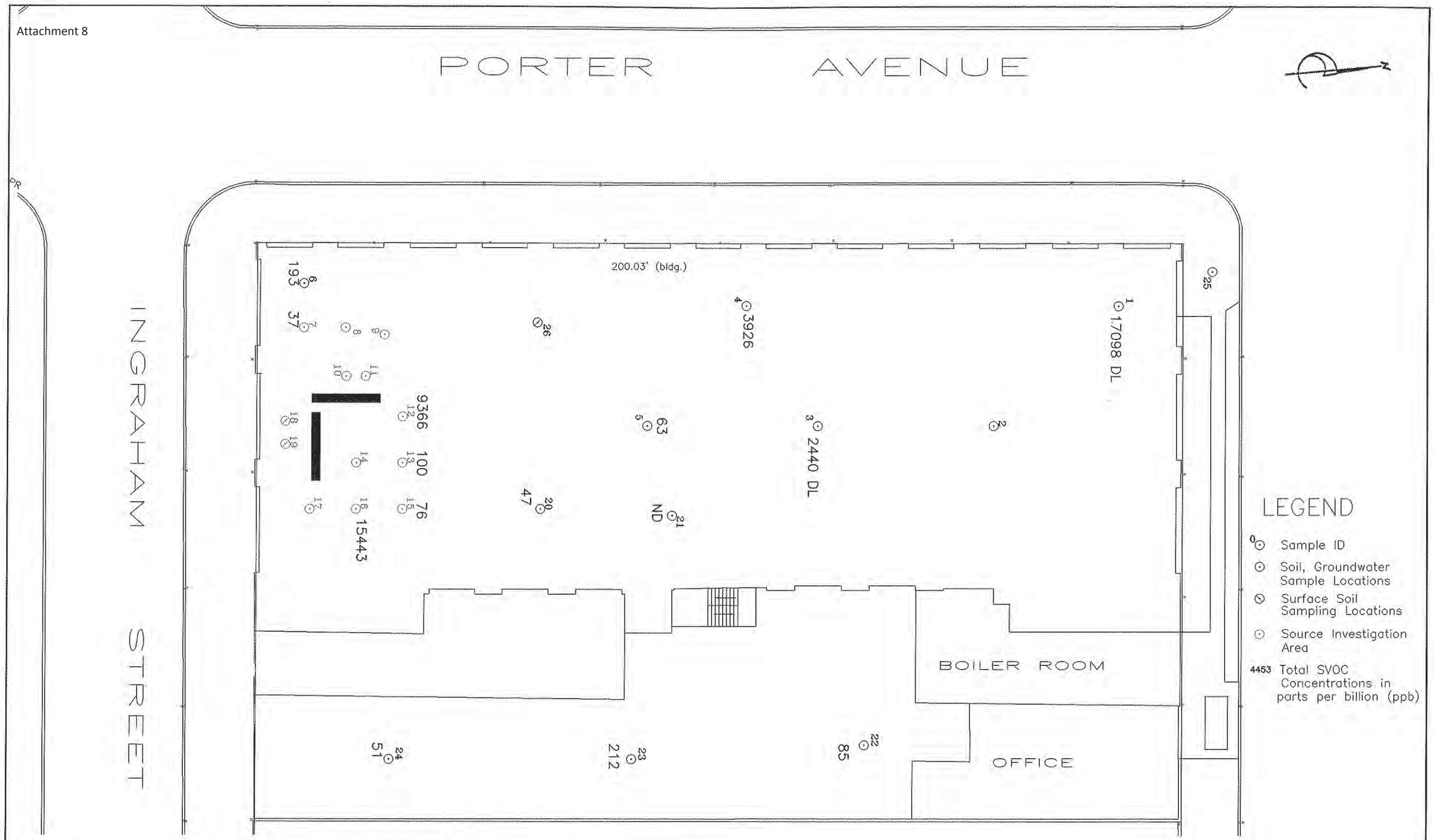
Attachment 8




Source: City of New York, County of Kings, Tax Lot 1, Survey by Montrose Surveying, INC., Richmond Hill, NY

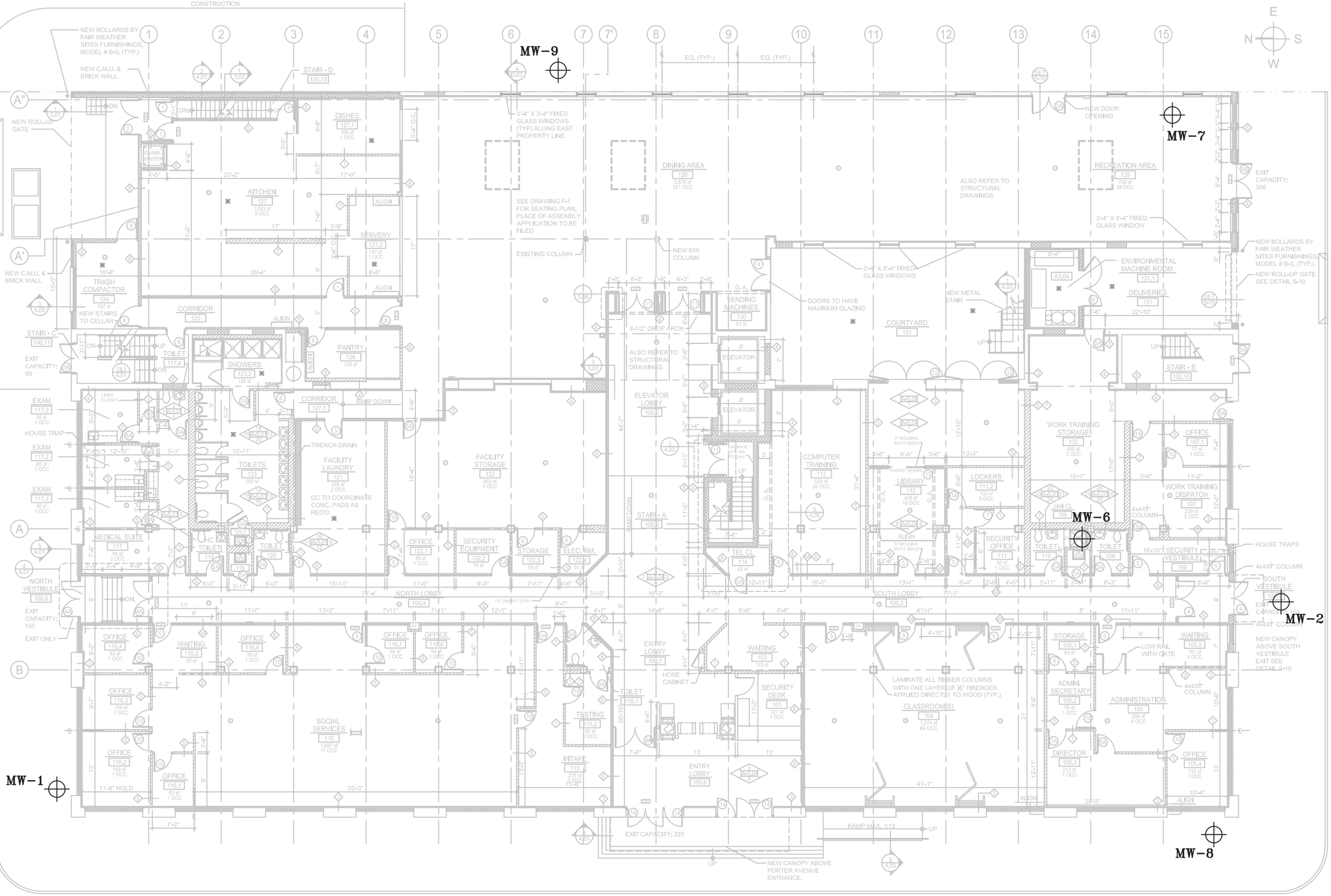
CARPENTER ENVIRONMENTAL ASSOCIATES, Inc.
CEA ENGINEERS, P.C.

Source Investigation
Site Investigation
Total SVOC Concentrations in Soil (12–16 Foot Interval)
89–111 Porter Avenue

FIGURE 20

DATE: 6/29/01
FILE: 00037fig20.dwg
SCALE: 1" = 20'

Attachment 9




1st FLOOR PLAN
SCALE: 1/8" = 1'-0"

NOTE: FULLY SPRINKLERED BUILDING TO COMPLY WITH TABLES 6-1 AND 6-2. MAXIMUM TRAVEL DISTANCE DOES NOT EXCEED 200 FEET. FIRST FLOOR CORRIDORS INCLUDE 10 EXIT DOORS TO EXTERIOR AT GRADE FOR A TOTAL OF 15 UNIT WIDTHS TO ALLOW A MAXIMUM OF 750 PERSONS (50 PER UNIT WIDTH) FIRST FLOOR ACTUAL OCCUPANCY NOT TO EXCEED 560, MINIMUM WIDTH OF UNOBSTRUCTED AISLE OF 3'-0" FEET LEADING TO EXITS SHALL BE MAINTAINED - SEE F-1 FOR LAYOUT

CARPENTER ENVIRONMENTAL ASSOCIATES, Inc.
CEA ENGINEERS, P.C.

REVISIONS:

DATE: 5/13/09
JOB # 09011
FILE # MWLoc

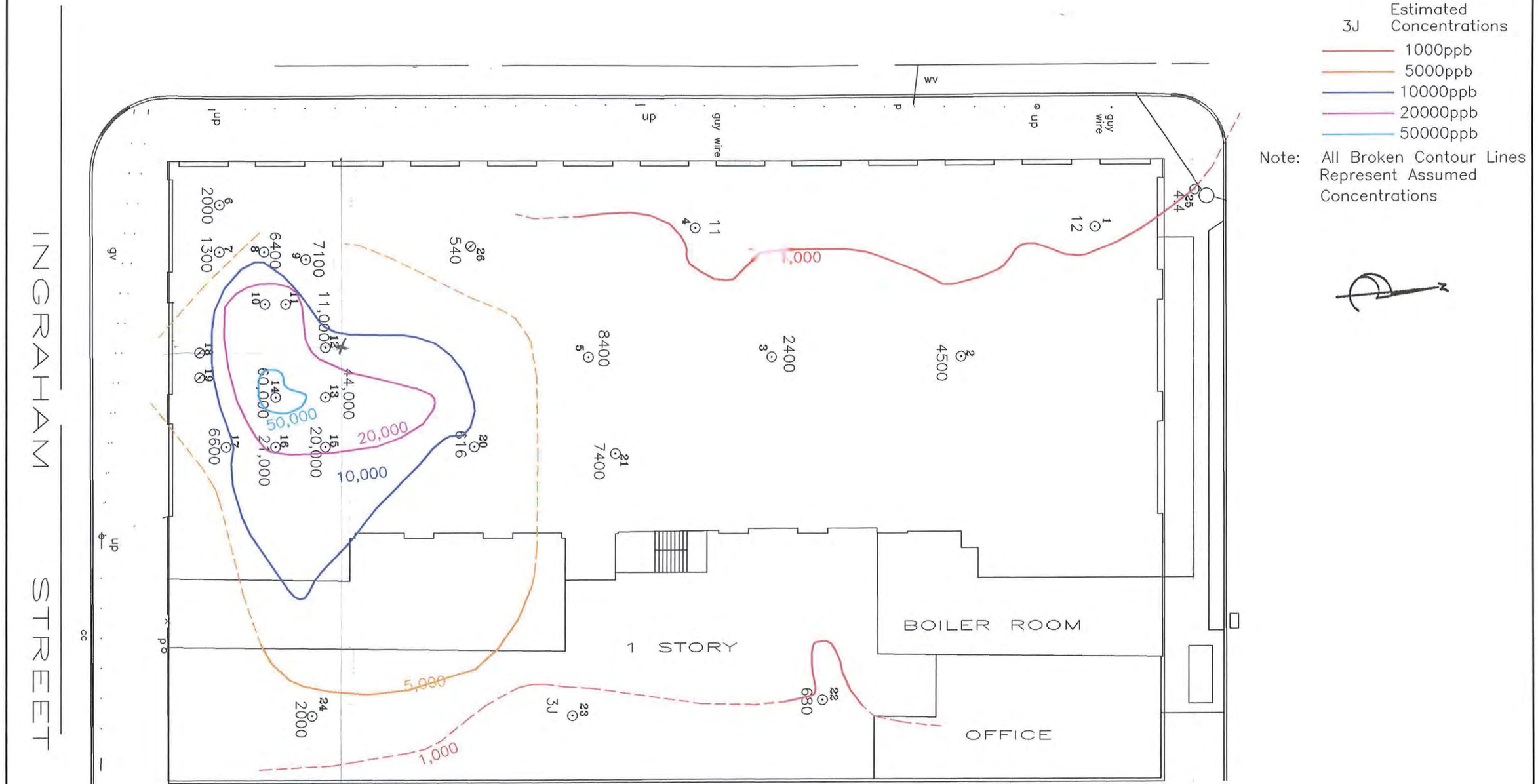
REFERENCES:
BASE MAP: SANTORELLO & GROOM, ARCHITECTS, PORTER AVE TRANSITIONAL RESIDENCE, 1ST FLOOR PLAN, SHEET NO. A-1.10, 02/27/2003

MONITORING WELL LOCATIONS

PETER JAY SHARP CENTER FOR OPPORTUNITY
89 PORTER AVENUE

FIGURE
8

Attachment 10




SOURCE: City of New York, County of Kings, Tax Block 2993, Architectural Survey by Montrose Surveying, INC., Richmond Hill, NY, February 11, 2000

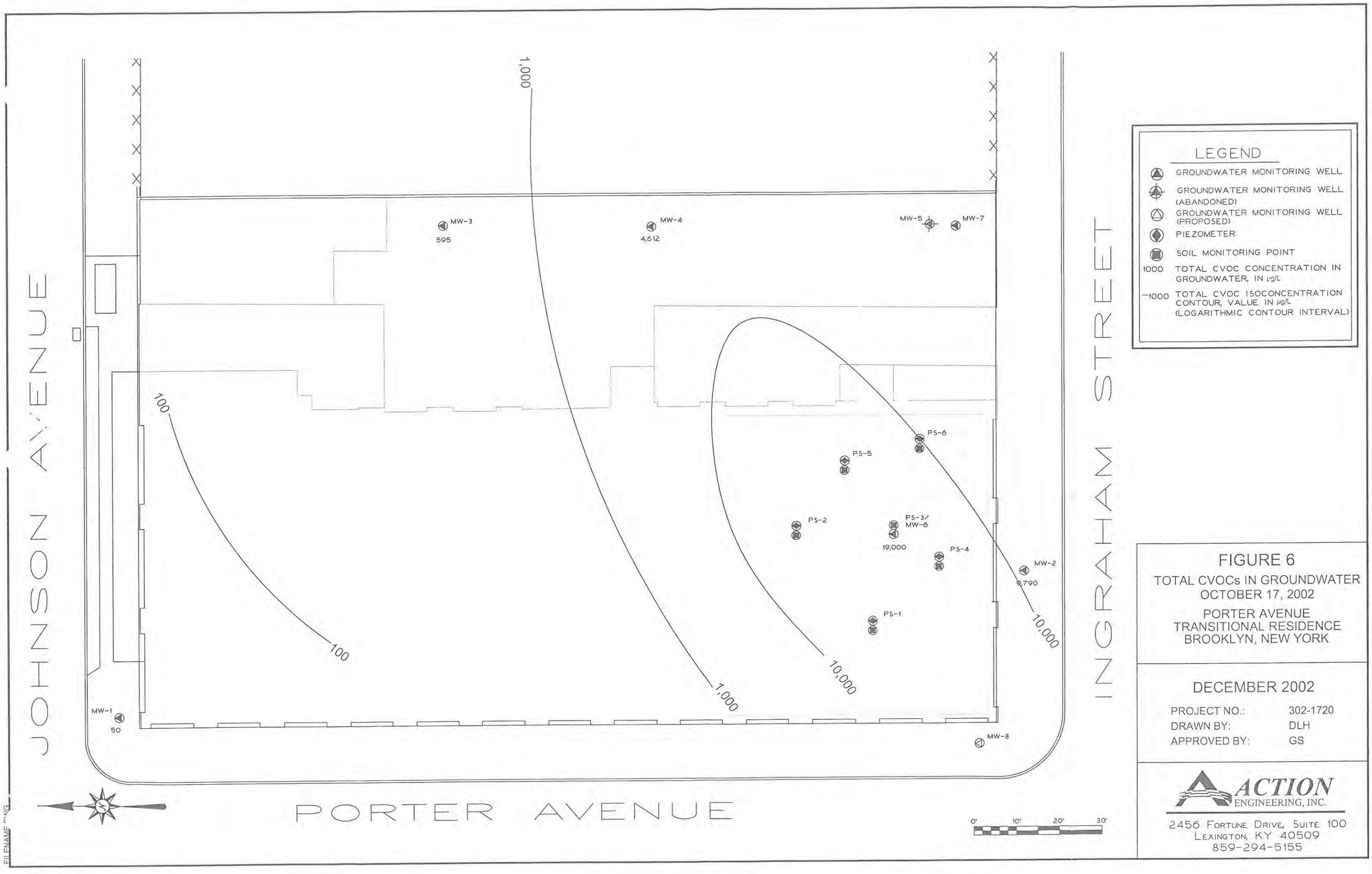
CARPENTER ENVIRONMENTAL ASSOCIATES, Inc.
CEA ENGINEERS, P.C.

PERC Groundwater Contaminant Plume
Site Investigation
89–111 Porter Avenue

FIGURE 22

DATE: 6/29/01
FILE: 00037fig22.dwg
SCALE: 1" = 20'

Attachment 11




# FIGURE 6

TOTAL CVOCs IN GROUNDWATER
OCTOBER 17, 2002

PORTER AVENUE
TRANSITIONAL RESIDENCE
BROOKLYN, NEW YORK

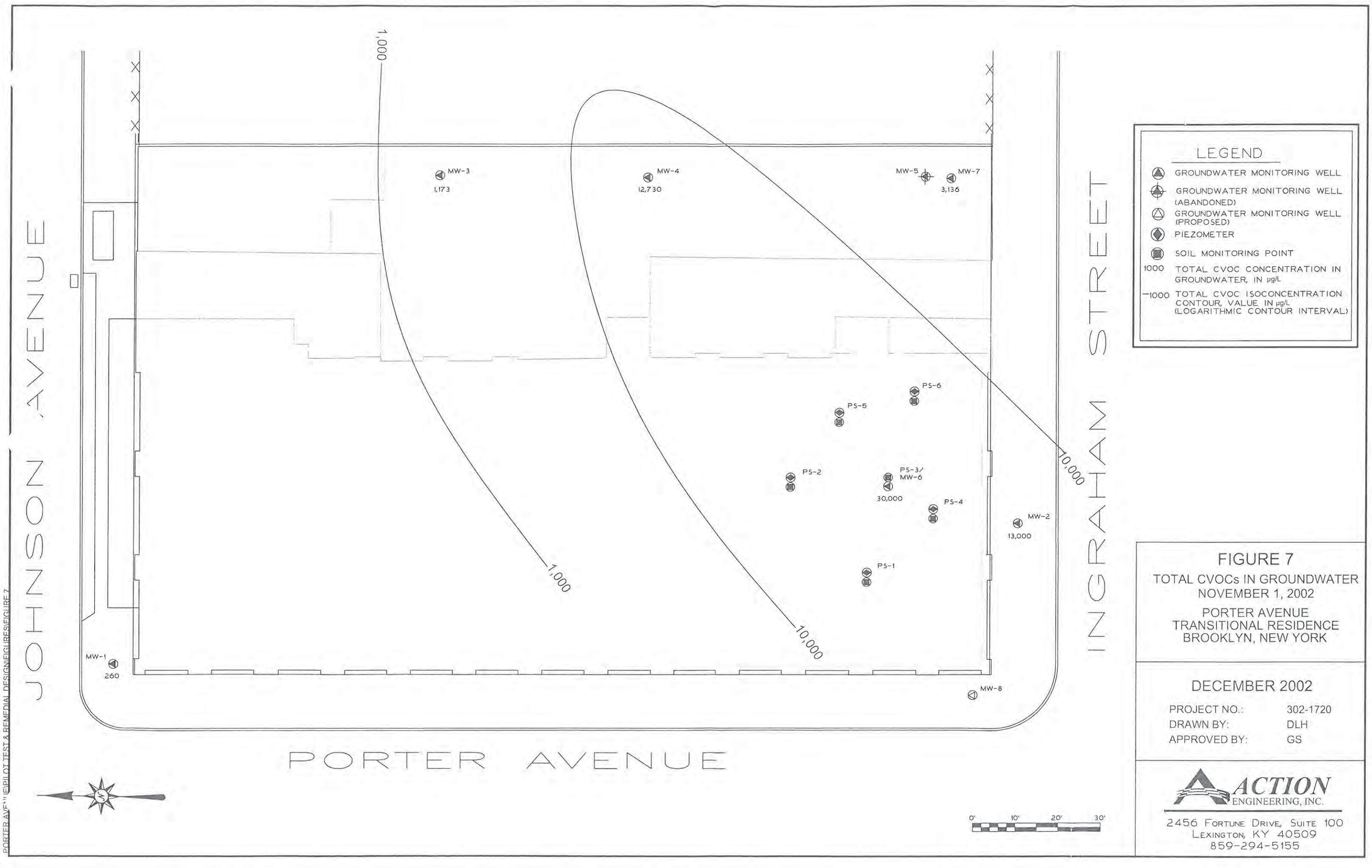
DECEMBER 2002

| | |
|---|---|
| PROJECT NO.: | 302-1720 |
| DRAWN BY: | DLH |
| APPROVED BY: | GS |


ACTION ENGINEERING, INC.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
859-294-5155


FILENAME.DWG

Attachment 11




# FIGURE 7

TOTAL CVOCs IN GROUNDWATER
NOVEMBER 1, 2002

PORTER AVENUE
TRANSITIONAL RESIDENCE
BROOKLYN, NEW YORK

DECEMBER 2002

| | |
|---|---|
| PROJECT NO.: | 302-1720 |
| DRAWN BY: | DLH |
| APPROVED BY: | GS |


ACTION ENGINEERING, INC.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
859-294-5155


PORTER AVE-11 E:\PILOT TEST & REMEDIAL DESIGN\FIGURES\FIGURE 7

Attachment 12

**Table 1 - Operating Period - December 1, 2009 through November 30, 2010**
**Analytical Results Summary - Groundwater**
**Volatile Organic Compounds**
**Peter Jay Sharp Center for Opportunity, Brooklyn, New York**
**CEA No. 21012**

| | | Volatile Organic Compound (ug/L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Well Number** | **Date** | **Methylene Chloride** | **cis-1,2-dichloroethene** | **Tetrachloroethene** | **Trichloroethene** | **Vinyl Chloride** | **Trans-1,2-Dichlorethene** | **Chloromethane** | **Toluene** | **1,1-Dichloroethene** | **Acetone** | **Total CVOCs Detected** |
| *NYSDEC Groundwater Quality Standards for VOCs (Title 6, Chapter X,* | | *5.0* | *5.0* | *5.0* | *5.0* | *1.0* | *5.0* | *NA* | *1000.0* | *5.0* | *NS* | |
| **MW-1** | 27-Jun-02 | 100.00 | 5.00 | 1.50 | 1.00 | **5.00** | 5.00 | ND | ND | ND | ND | 117.50 |
| | 17-Oct-02 | 0.96 JB | <0.84 | **50.00** | <1.7 | **<1.7** | <0.84 | ND | ND | ND | ND | 50.00 |
| | 1-Nov-02 | <10 | <5 | **260.00** | **<10** | **<10** | <5.0 | ND | ND | ND | ND | 260.00 |
| | 9-Jun-04 | <5 | 0.69 J | 0.82 J | 0.63 J | ND | <5 | ND | ND | ND | ND | 2.14 |
| | 15-Sep-04 | <1.0 | 0.9 J | 0.84 J | 0.64 J | <1 | <1 | ND | ND | ND | ND | 2.38 |
| | 13-Jan-05 | 0.55 J | <1 | 0.73 J | <1 | <1 | <1 | ND | ND | ND | ND | 1.28 |
| | 30-Mar-05 | <1 | 1.20 | 1.70 | 1.40 | <1 | <1 | ND | ND | ND | ND | 4.30 |
| | 23-Jun-05 | <1 | <1.0 | <1 | <1 | <1 | <1 | ND | ND | ND | ND | <1 |
| | 28-Sep-05 | 0.84 J | 1.60 | 0.79 J | 0.95 J | <1 | <1 | ND | ND | ND | ND | 4.18 |
| | 28-Dec-05 | <1 | 1.20 | <1 | <1 | <1 | <1 | ND | ND | ND | ND | 1.20 |
| | 28-Mar-06 | <1 | 4.20 J | 0.62 J | 1.20 J | <1 | <1 | ND | ND | ND | ND | 6.02 |
| | 28-Jun-06 | <1 | **9.80** | 0.75 J | 2.7 J | <1 | <1 | 0.65 J | ND | ND | ND | 13.90 |
| | 27-Sep-06 | <5B | **8.90** | 1.70 J | 1.60 J | <5 | <5 | <5 | ND | ND | ND | 12.20 |
| | 10-Jan-07 | < 5 | **7.50** | 1.8 J | 1.2 J | <5 | <5 | <5 | 0.56 J | ND | ND | 11.06 |
| | 28-Mar-07 | 0.44 J | **12.00** | 0.63 J | 1.0 J | <5 | <5 | <5 | <5 | ND | ND | 14.07 |
| | 29-Aug-07 | <5 | **14.00** | 1.2 J | 2.1 J | <5 | <5 | <5 | <5 | <5 | ND | 17.30 |
| | 19-Dec-07 | <5 | **6.90** | <5 | <5 | <5 | <5 | <5 | <5 | <5 | ND | 6.90 |
| | 26-Mar-08 | <5 | **9.80** | 5 UM | 1.2 J | <5 | <5 | <5 | <5 | <5 | ND | 11.00 |
| | 23-Jun-08 | 0.6 JB | **29.00** | <5 | 3.6 J | <5 | <5 | <5 | <5 | <5* | 9.1 JB | 42.30 |
| | 25-Sep-08 | <5 | **37.00** | 1.1 J | **5.10** | <5 | <5 | <5 | <5 | <5 | 6.6 J | 49.80 |
| | 18-Feb-09 | <5 | **34.00** | 1.4 J | **8.50** | <5 | <5 | <5 | <5 | <5 | 2.9 J | 46.80 |
| | 12-Aug-09 | <5 | **35.00** | 1.9 J | **11.00** | <5 | <5* | <5 | <5 | <5 | <10 | 47.90 |
| | 14-Apr-10 | <5 | **21** | 3.8 J | **8.9** | <5 | <5 | <5 | <5 | <5 | <5 | 33.70 |
| | 13-Oct-10 | <5 | **9.5** | 2.7 J | 1.4J | <5 | 1.8J | <5 | <5 | <5 | 2.8 JB | 18.20 |
| | | | | | | | | | | | | |
| **MW-2** | 27-Jun-02 | 15.00 | **31.00** | **540.00** | **12.00** | **25.00** | 25.00 | ND | ND | ND | ND | 648.00 |
| | 17-Oct-02 | 180 JB | **<170** | **9600.00** | **190** J | **<330** | <170 | ND | ND | ND | ND | 9790.00 |
| | 1-Nov-02 | <620 | **<310** | **13000.00** | **<620** | **<620** | <310 | ND | ND | ND | ND | 13000.00 |
| | 9-Jun-04 | <5 | **120** D | **2700** D | **62** JD | ND | <5 J | ND | ND | ND | ND | 2882.00 |
| | 15-Sep-04 | <1 | **74** D | **2200** D | **100** D | <1 | <1 | ND | ND | ND | ND | 1374.00 |
| | 13-Jan-05 | 0.56 J | **100** E | **3100** D | **100** E | <1 | <1 | ND | ND | ND | ND | 3306.06 |
| | 30-Mar-05 | **44** JD | **110** D | **2400** D | **62** D | <1 | <1 | ND | ND | ND | ND | 2573.20 |
| | 23-Jun-05 | <1 | **130** D | **3400 D** | **73** JD | <1 | <100 | ND | ND | ND | ND | 3603.00 |
| | 28-Sep-05 | <50 | **180 D** | **1100 D** | **63 D** | <50 | <50 | ND | ND | ND | ND | 1343.00 |
| | 28-Dec-05 | <20 | **120.00** | **2200 D** | **54.00** | <20 | <20 | ND | ND | ND | ND | 2374.00 |
| | 28-Mar-06 | **18.0 JB** | **190.00** | **3200.00** | **61.0 J** | <20 | <20 | <20 | ND | ND | ND | 3480.00 |
| | 28-Jun-06 | <20 | **110.00** | **1700.00** | **14.00** | <20 | **15.00** | <20 | ND | ND | ND | 1839.00 |
| | 27-Sep-06 | **18.0 JB** | **75.0 J** | **1100.00** | **36.0 J** | <120 | <120 | <120 | ND | ND | ND | 1229.00 |
| | 10-Jan-07 | **26.0 JB** | **690.00** | **2500 B** | **190 J** | **38 J** | <200 | <200 | <200 | ND | ND | 3444.00 |
| | 28-Mar-07 | <200 | **110.00** | **2600.00** | **42.00** | <100 | <100 | <100 | <100 | ND | ND | 2752.00 |
| | 29-Aug-07 | **93 J*B** | **26.00 J** | **840.00** | **33.00 J** | <130 | <130 | <130 | <130 | <130 | ND | 992.00 |
| | 19-Dec-07 | **9.6JMB** | **36J** | **1200.00** | **47 J** | <100 | <100 | <100 | <100 | <100 | ND | 1292.60 |
| | 26-Mar-08 | **10 JB** | **64.00** | **1700.00** | **42 J** | <50 | <50 | <50 | <50 | <50 | ND | 1816.00 |
| | 23-Jun-08 | <100 | **58 J** | **1900.00** | **30 J** | **13 JB** | <100 | <100 | <100 | <100 | ND | 2001.00 |
| | 25-Sep-08 | <100 | <100 | **810.00** | **32 J** | <100 | <100 | <100 | <100 | <100 | <200 | 842.00 |
| | 18-Feb-09 | <100 | 35 J | **1100.00** | **40 J** | <100 | <100 | <100 * | <100 | <100 | 21 J | 1196.00 |
| | 12-Aug-09 | <50 | **11 J** | **590.00** | **15 J** | <50 | <50 | <50 | <50 | <50 | 31 J | 647.00 |
| | 14-Apr-10 | **9.6 JB** | **42 J** | **1100** | **43 J** | <50 | <50 | <50 | <50 | <50 | <100 | 1194.60 |
| | 13-Oct-10 | **30 JB** | **37 J** | **1600** | **36 J** | <100 | <100 | <100 | <100 | <100 | 28 J | 1731.00 |

Attachment 12

**Table 1 - Operating Period - December 1, 2009 through November 30, 2010**
**Analytical Results Summary - Groundwater**
**Volatile Organic Compounds**
**Peter Jay Sharp Center for Opportunity, Brooklyn, New York**
**CEA No. 21012**

| | | Volatile Organic Compound (ug/L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Well Number** | **Date** | **Methylene Chloride** | **cis-1,2-dichloroethene** | **Tetrachloroethene** | **Trichloroethene** | **Vinyl Chloride** | **Trans-1,2-Dichlorethene** | **Chloromethane** | **Toluene** | **1,1-Dichloroethene** | **Acetone** | **Total CVOCs Detected** |
| *NYSDEC Groundwater Quality Standards for VOCs (Title 6, Chapter X,* | | *5.0* | *5.0* | *5.0* | *5.0* | *1.0* | *5.0* | *NA* | *1000.0* | *5.0* | *NS* | |
| **MW-6** | 18-Oct-02 | 400 JB | **<310** | **19000.00** | **<620** | **<620** | <310 | ND | <50 | ND | ND | 19000.00 |
| | 1-Nov-02 | <1,700 | **<830** | **30000.00** | **<1,700** | **<1,700** | <830 | ND | <50 | ND | ND | 30000.00 |
| | 30-Mar-05 | **69 D** | **45** D | **1700** D | **60** D | <1 | <1 | ND | <50 | ND | ND | 1829.00 |
| | 23-Jun-05 | <1 | **50** D | **910** D | **46** JD | <50 | <50 | ND | <50 | ND | ND | 1006.00 |
| | 28-Sep-05 | | **210 D** | **320 D** | **150.00** | D | <25 | ND | <50 | ND | ND | 680.00 |
| | 28-Dec-05 | <1 | 2.40 | **22.00** | 2.90 | <1 | <1 | ND | <50 | ND | ND | 27.30 |
| | 28-Mar-06 | **17.0 JB** | **72.0 J** | **2700.00** | **49.0 J** | <2 | <2 | ND | <50 | ND | ND | 2838.00 |
| | 28-Jun-06 | <20 | **20.00** | **140.00** | **16.00** | <20 | <20 | 0.65 J | <50 | ND | ND | 176.65 |
| | 10-Jan-07 | **46 JB** | **67 J** | **4300 B** | **230 J** | <250 | <250 | <250 | <250 | ND | ND | 4643.00 |
| | 28-Mar-07 | <200 | **86 J** | **3800.00** | **91 J** | <200 | <200 | <200 | <200 | ND | ND | 3977.00 |
| | 29-Aug-07 | **36 JB** | <500 | **1700.00** | <500 | <500 | <500 | <500 | <500 | <500 | ND | 1736.00 |
| | 19-Dec-07 | **2.3JMB** | **11J** | **280.00** | **6.4J** | <20 | <20 | <20 | <20 | <20 | ND | 299.70 |
| | 26-Mar-08 | **7.5 JB** | **25.00** | **590.00** | **25.00** | <20 | <20 | <20 | <20 | <20 | ND | 647.50 |
| | 23-Jun-08 | 0.44 J | **5.10** | **47.00** | 1.8 J | <5 | <5 | <5 | <5 | <5 | ND | 54.34 |
| | 25-Sep-08 | <120 | **38 J** | **1300.00** | **33 J** | <120 | <120 | <120 | <120 | <120 | 45 J | 1416.00 |
| | 18-Feb-09 | <5 | <5 | 3.9 J | <5 | <5 | <5 | <5 * | <5 | <5 | <10 | 3.90 |
| | 12-Aug-09 | <5 | 1.2 J | 2.0 J | <5 | <5 | <5* | <5 | <5 | <5* | <10 | 3.20 |
| | 14-Apr-10 | <5 | 3.4 J | **94** | 1.2 J | <5 | <5 | <5 | <5 | <5 | <10 | 98.60 |
| | 13-Oct-10 | <5 | **15** | **21** | **6.7** | <5 | <5 | <5 | <5 | <5 | 1.1 JB | 43.80 |
| | | | | | | | | | | | | |
| **MW-7** | 27-Jun-02 | 3.00 | **79.00** | **75.00** | **64.00** | 1.2 J | 2.5 J | ND | ND | ND | ND | 224.70 |
| | 1-Nov-02 | <83 | **740.00** | **2200.00** | **140.00** | **56** J | <42 | <42 | ND | ND | ND | 3136.00 |
| | 9-Jun-04 | <5 | **38.00** | **8.30** | 3.50 | ND | <5 | <5 | ND | ND | ND | 49.80 |
| | 15-Sep-04 | <1 | **23.00** | **95.00** | **8.80** | <1 | 0.56 J | <1 | ND | ND | ND | 129.56 |
| | 30-Mar-05 | 0.7 J | 7.80 | **48.00** | 4.20 | <1 | <1 | <1 | ND | ND | ND | 60.00 |
| | 23-Jun-05 | <1 | 3.20 | **15.00** | 1.80 | <1 | <1 | <1 | ND | ND | ND | 20.00 |
| | 28-Sep-05 | 0.89 J | 5.30 | **10.00** | 2.30 | <1 | <1 | <1 | ND | ND | ND | 18.49 |
| | 28-Dec-05 | 0.6 J | **36.00** | **94.00** | **5.20** | <1 | <1 | <1 | ND | ND | ND | 136.36 |
| | 26-Mar-06 | 2.4 JB | **64.00** | **220.00** | **18.00** | <20 | <20 | <20 | ND | ND | ND | 304.40 |
| | 28-Jun-06 | 1.40 | **95.00** | **460.00** | **29.00** | <10 | 1.10 | 1.6 HB | ND | ND | ND | 588.10 |
| | 27-Sep-06 | 4.80 JB | **110.00** | **450.00** | **28.0 J** | <50 | <50 | <50 | ND | ND | ND | 592.80 |
| | 10-Jan-07 | 2.4 JB | **10.0 J** | **230.0 B** | **5.1 J** | <20 | <20 | <20 | <20 | ND | ND | 247.50 |
| | 28-Mar-07 | <5 | **60.00** | **180.00** | **16.00** | 4.70 | 0.85 J | <5 | <5 | 0.8 J | ND | 262.35 |
| | 29-Aug-07 | 0.26 JB | **30** | **81.0** | **6.4** | 1.2 J | 5.0 | <5 | <5 | 0.27 J | ND | 119.98 |
| | 19-Dec-07 | 1.7JMB | **11J** | **260.0** | **5.9J** | <20 | <20 | <20 | <20 | <20 | ND | 278.60 |
| | 26-Mar-08 | <5 | **14.00** | **55.00** | 3.4 J | <5 | <5 | <5 | <5 | <5 | ND | 72.40 |
| | 23-Jun-08 | 0.39 JB | **12.00** | **40.00** | 2.6 J | <5 | <5 | <5 | <5 | <5* | 4.9 JB | 59.89 |
| | 25-Sep-08 | <5 | 4.6 J | **38.00** | 2.3 J | <5 | <5 | <5 | <5 | <5 | <10 | 44.90 |
| | 18-Feb-09 | <5 | **15.00** | **66.00** | 4.1 J | <5 | <5 | <5 * | <5 | <5 | <10 | 85.10 |
| | 12-Aug-09 | <5 | **21.00** | **95.00** | **8.30** | <5 | <5* | <5 | <5 | <5* | <10 | 124.30 |
| | 14-Apr-10 | <5 | **14** | **59** | 4.3 J | <5 | <5 | <5 | <5 | <5 | <10 | 77.30 |
| | 13-Oct-10 | **9.9 JB** | **9.8 J** | **140** | **5.8 J** | <10 | <10 | <10 | <10 | <10 | 7.1 JB | 172.60 |

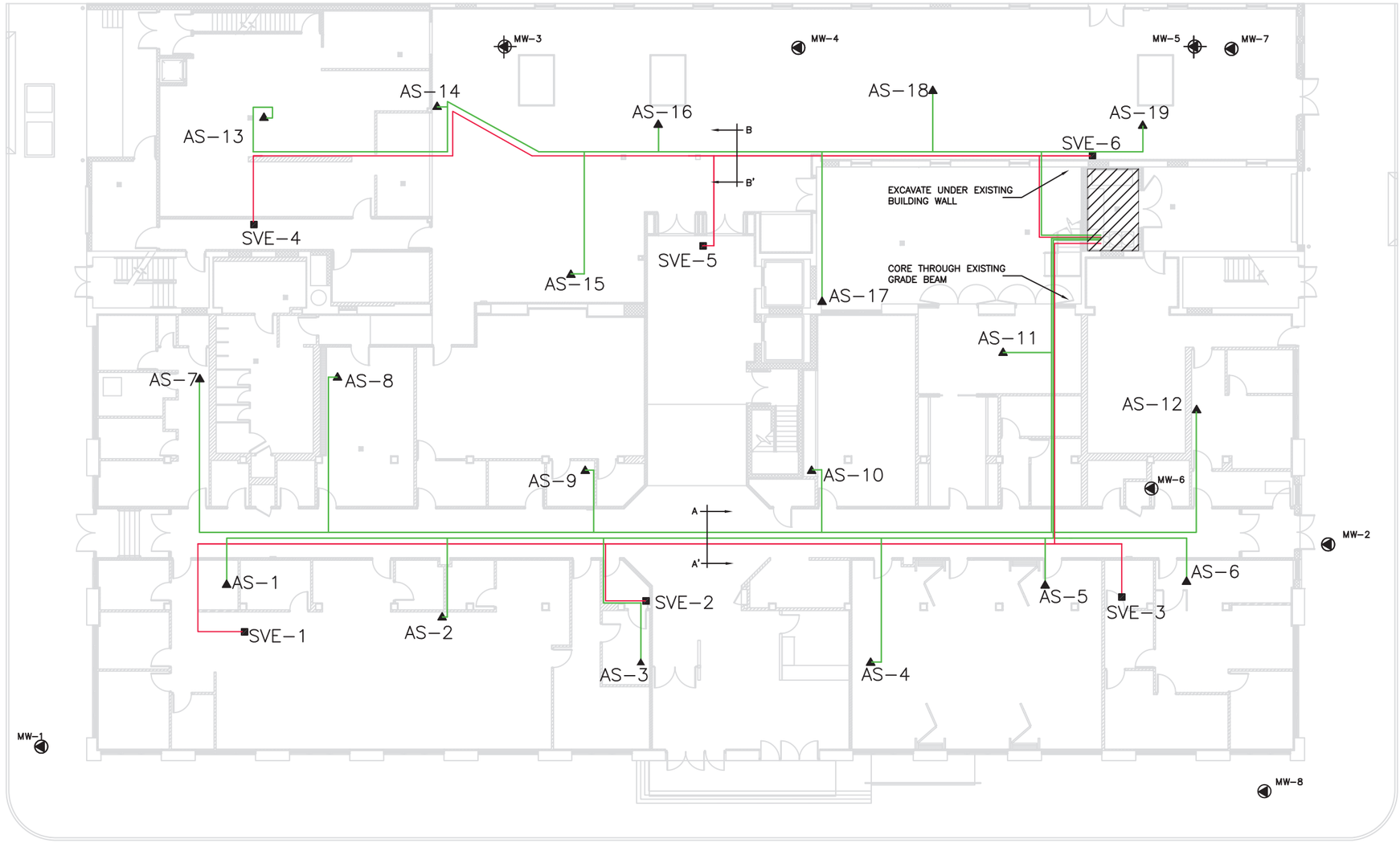
Attachment 12

**Table 1 - Operating Period - December 1, 2009 through November 30, 2010**
**Analytical Results Summary - Groundwater**
**Volatile Organic Compounds**
**Peter Jay Sharp Center for Opportunity, Brooklyn, New York**
**CEA No. 21012**

| | | Volatile Organic Compound (ug/L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Well Number** | **Date** | **Methylene Chloride** | **cis-1,2-dichloroethene** | **Tetrachloroethene** | **Trichloroethene** | **Vinyl Chloride** | **Trans-1,2-Dichlorethene** | **Chloromethane** | **Toluene** | **1,1-Dichloroethene** | **Acetone** | **Total CVOCs Detected** |
| *NYSDEC Groundwater Quality Standards for VOCs (Title 6, Chapter X,* | | *5.0* | *5.0* | *5.0* | *5.0* | *1.0* | *5.0* | *NA* | *1000.0* | *5.0* | *NS* | |
| **MW-8** | 27-Jun-02 | 28 J | **16** J | **500.00** | **12.00** | **50.00** | 50.00 | <1 | ND | ND | ND | 656.00 |
| | 9-Jun-04 | ND | **12** D | **170** D | **13** D | ND | <5 | <5 | ND | ND | ND | 195.00 |
| | 15-Sep-04 | <1 | **10** D | **140** E | **14** D | <1 | <1 | <1 | ND | ND | ND | 164.70 |
| | 13-Jan-05 | 0.74 J | **27** D | **440** D | **34** D | <1 | 0.57 J | <1 | ND | ND | ND | 502.31 |
| | 30-Mar-05 | 5.2 D | 3.6 JD | **91** D | **7.0** D | <1 | <1 | <1 | ND | ND | ND | 106.80 |
| | 23-Jun-05 | <1 | **5.1 JD** | **260 D** | **8.7 JD** | <1 | <1 | <1 | ND | ND | ND | 273.80 |
| | 28-Sep-05 | <1 | **8.7 JD** | **120.00** | **10.00** | <10 | <10 | <10 | ND | ND | ND | 138.70 |
| | 28-Dec-05 | <1 | 3.10 | **41.00** | 2.80 | <1 | <1 | <1 | ND | ND | ND | 47.46 |
| | 26-Mar-06 | 2.4 JB | **8.7 J** | **310.00** | **14.00** | <1 | <1 | <1 | ND | ND | ND | 335.10 |
| | 28-Jun-06 | 1.10 | **11.00** | **200.00** | **12.00** | <10 | <10 | 1.4 JB | ND | ND | ND | 225.50 |
| | 27-Sep-06 | 1.0 JB | **5.60 J** | **170.00** | **10.00** | <10 | <10 | <10 | ND | ND | ND | 186.60 |
| | 10-Jan-07 | 0.94 JB | 1.9 J | **110.0 B** | 3.8 J | <10 | <10 | <10 | <10 | ND | ND | 116.64 |
| | 28-Mar-07 | 0.83 J | **9.7 J** | **260.00** | **13.00** | <10 | <10 | <10 | <10 | ND | ND | 283.53 |
| | 29-Aug-07 | 2.1 JB | 3.6 J | **100.0** | **8.3 J** | <10 | <10 | <10 | <10 | <10 | ND | 114.00 |
| | 19-Dec-07 | 2.1 JB | 1.7J | **100.0** | **6.4 J** | <10 | <10 | <10 | <10 | <10 | ND | 110.20 |
| | 26-Mar-08 | <5 | 1.8 J | **120.00** | **7.20** | <5 | <5 | <5 | <5 | <5 | ND | 129.00 |
| | 23-Jun-08 | <5 | 3.1 J | **66.00** | **5.40** | <5 | <5 | <5 | <5 | <5 | 6.1 JB | 80.60 |
| | 25-Sep-08 | <10 | **6.3 J** | **130.00** | **11.00** | <10 | <10 | <10 | <10 | <10 | 3.8 J | 151.10 |
| | 18-Feb-09 | <5 | 1.6 J | **78.00** | **5.80** | <5 | <5 | <5 * | <5 | <5 | <10 | 85.40 |
| | 12-Aug-09 | <5 | 1.2 J | **24.00** | 3.4 J | <5 | <5* | <5 | <5 | <5* | <10 | 28.60 |
| | 14-Apr-10 | <5 | 1.0 J | **70** | 4.1 J | <5 | <5 | <5 | <5 | <5 | <10 | 75.10 |
| | 13-Oct-10 | <5 | 1.0 J | **38** | 3.5 J | <5 | <5 | <5 | <5 | <5 | 1.3 JB | 43.80 |
| **MW-9** | 9-Jun-04 | <5 | **8.00** | **18.00** | **5.60** | ND | 0.93 J | <5 | ND | ND | ND | 32.53 |
| | 15-Sep-04 | <1 | **9.80** | 3.60 | 1.60 | <1 | <1 | <1 | ND | ND | ND | 15.95 |
| | 13-Jan-05 | 0.56 | **5.50** | 3.20 | 1.40 | <1 | <1 | <1 | ND | ND | ND | 11.16 |
| | 30-Mar-05 | 0.84 | 2.10 | **5.20** | 3.30 | <1 | <1 | <1 | ND | ND | ND | 10.60 |
| | 23-Jun-05 | <1 | **5.80** | **5.30** | 3.20 | <1 | <1 | <1 | ND | ND | ND | 14.95 |
| | 28-Sep-05 | 0.82 J | **9.70** | 3.80 | 2.80 | <1 | <1 | <1 | ND | ND | ND | 17.12 |
| | 28-Dec-05 | <1 | 2.30 | **8.30** | **5.90** | <1 | <1 | <1 | ND | ND | ND | 16.50 |
| | 28-Mar-06 | <1.0 | **21.00** | **7.40** | 4.5 J | <1 | <1 | <1 | ND | ND | ND | 32.90 |
| | 28-Jun-06 | <1 | **12.00** | **7.20** | **5.10** | <1 | <1 | <1 | ND | ND | ND | 24.30 |
| | 27-Sep-06 | <5 B | **14.00** | **7.50** | **6.40** | <5 | <5 | <5 | ND | ND | ND | 27.90 |
| | 10-Jan-07 | <5 | 1.5 J | 3.0 J | **5.40** | <5 | <5 | <5 | <5 | 0.44 J | ND | 10.34 |
| | 28-Mar-07 | NOT SAMPLED | | | | | | | | | | |
| | 29-Aug-07 | <5 | **11.0** | 14.00 | 3.50 | <5 | <5 | <5 | <5 | <5 | ND | 28.50 |
| | 19-Dec-07 | <5 | 3.4 J | 5.30 | 1.3 J | <5 | <5 | <5 | <5 | <5 | ND | 10.00 |
| | 26-Mar-08 | <5 | 0.66 J | 2.0 J | 0.44 J | <5 | <5 | <5 | <5 | <5 | ND | 3.10 |
| | 23-Jun-08 | <5 | <5 | <5 | 0.36J | <5 | <5 | <5 | <5 | <5 | 11.0 B | 11.36 |
| | 25-Sep-08 | NOT SAMPLED | | | | | | | | | | |
| | 18-Feb-09 | <5 | 1.3 J | 2.7 J | 0.89 J | <5 | <5 | <5 * | <5 | <5 | <10 | 4.89 |
| | 12-Aug-09 | <5 | <5 | <5 | 0.78 J | <5 | <5* | <5 | <5 | <5* | <10 | 0.78 |
| | 14-Apr-10 | <5 | <5 | <5 | 0.82 J | <5 | <5 | <5 | <5 | <5 | <10 | 0.82 |
| | 13-Oct-10 | <5 | <5 | 1.1 J | 2.0 J | <5 | <5 | <5 | <5 | <5 | 1.9 JB | 5.00 |

Notes:

**Bolded =** results above allowable levels
J = Estimated result. Result is less than Reporting Limit
B = Method blank contamination. The associated blank contains the target analyte at a reportable level.
D = Diluted
NA = Not analyzed
NS = No standard available
M = Presence of material is verified by not quallified
* = LSC or LCSD or Surrogate exceed control limits
ND = Not detected above reporting limit




NOTES:

1. All SVE Branch Piping is 3" Diameter Schedule 40 PVC.
2. All SVE Sub-Branch Piping is 2" Diameter Schedule 40 PVC.
3. All Air Sparge (AS) Branch Piping is 2" Diameter.
4. All AS Sub-Branch Piping is 1" Diameter.
5. All AS Branch and Sub-Branch Piping Within 40' of Treatment Building is of Threaded Steel Construction. All Remaining Branches And Sub-Branches is of Schedule 40 PVC Construction.
6. All AS Well Casing and Screen is 3/4" Diameter Schedule 40 PVC.
7. All SVE Well Casing and Screen is 2" Diameter Schedule 40 PVC.

LEGEND

- Groundwater Monitoring Well
- Groundwater Monitoring Well (Abandoned)
- Air Sparge Well
- Environmental System Room Location
- Soil Vapor Extraction Well
- SVE Piping
- AS Piping

E N S W

0' 10' 20' 30'

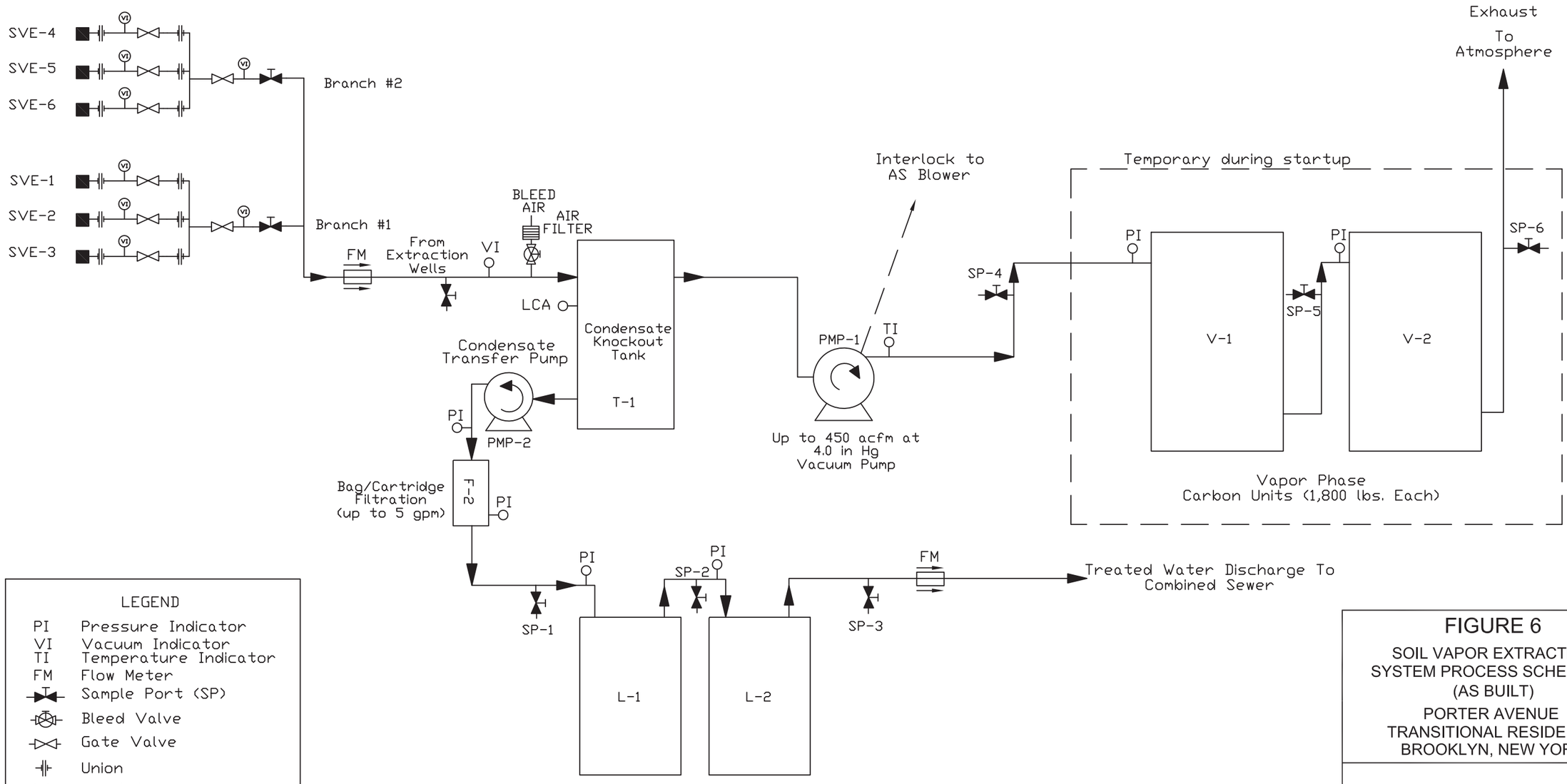
# FIGURE 4
AIR SPARGE AND SOIL VAPOR EXTRACTION SYSTEM LAYOUT (AS BUILT)
PORTER AVENUE TRANSITIONAL RESIDENCE
BROOKLYN, NEW YORK

OCTOBER 2003

| | |
|---|---|
| PROJECT NO.: | 302-1720 |
| DRAWN BY: | BG |
| APPROVED BY: | MS |

ACTION ENGINEERING, INC.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
(859) 294-5155

Attachment 14




LEGEND

| | |
|---|---|
| PI | Pressure Indicator |
| VI | Vacuum Indicator |
| TI | Temperature Indicator |
| FM | Flow Meter |
| | Sample Port (SP) |
| | Bleed Valve |
| | Gate Valve |
| | Union |
| LA | Level Alarm |
| LCA | Level Control and Alarm |
| —— | Potential Future |

Not to Scale

# FIGURE 6

SOIL VAPOR EXTRACTION SYSTEM PROCESS SCHEMATIC (AS BUILT)

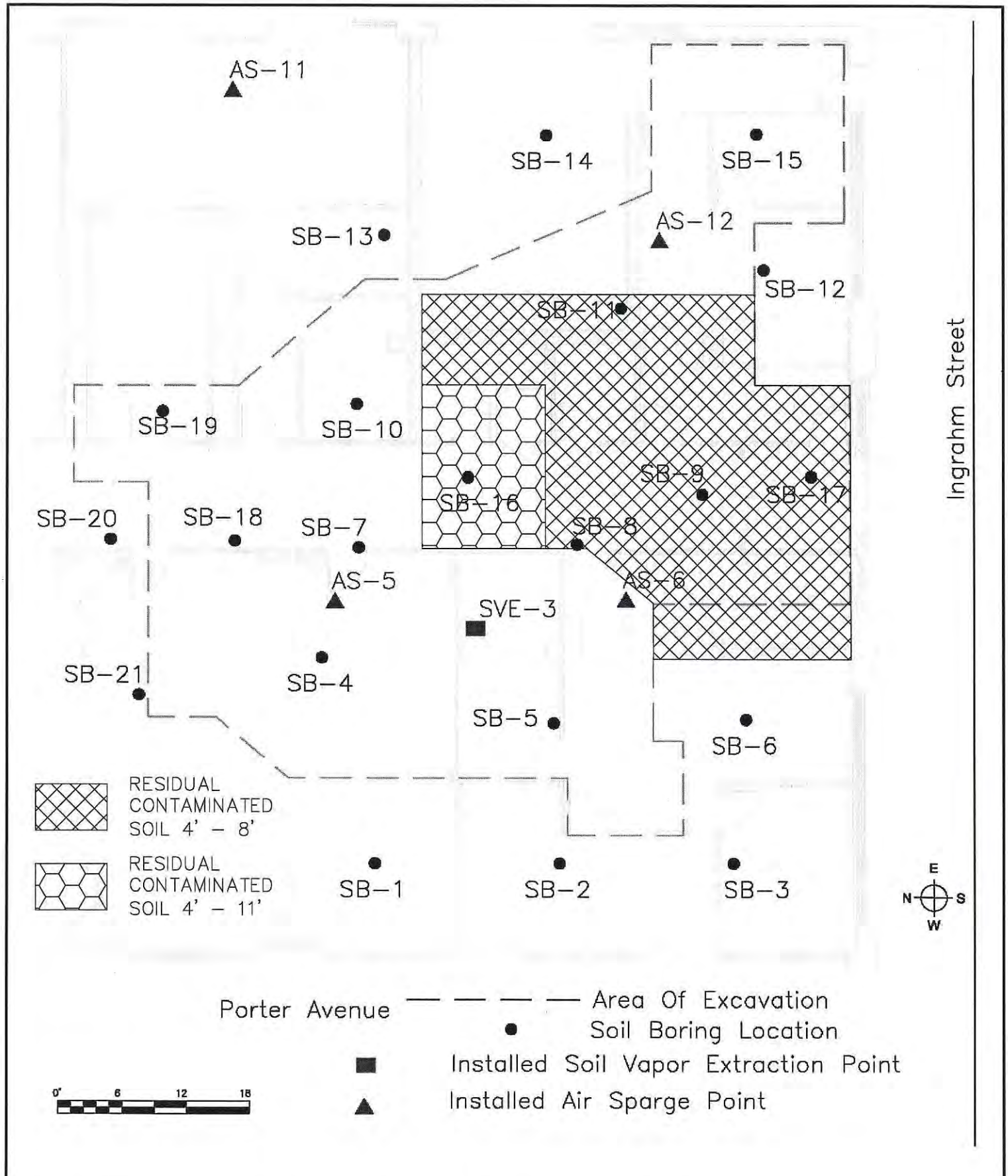
PORTER AVENUE TRANSITIONAL RESIDENCE BROOKLYN, NEW YORK

OCTOBER 2003

| | |
|---|---|
| PROJECT NO.: | 302-1720 |
| DRAWN BY: | DLH |
| APPROVED BY: | MS |

ACTION ENGINEERING, INC.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
859-294-5155

Attachment 15




BASE: ACTION ENGINEERING, INC., PROJ. 3021720, FIG. 2, SOIL SOURCE AREA PLAN, 10/2003

CARPENTER ENVIRONMENTAL ASSOCIATES, Inc.
CEA ENGINEERS, P.C.

# RESIDUAL CONTAMINATED SOIL

MAY 12 - 13 2003
PORTER AVENUE - BROOKLYN, NEW YORK

**FIGURE 3**

DATE: 04/16/09
FILE: 09011_ResContSoil
SCALE: AS NOTED